

# SIERRA CLUB BULLETIN

VOLUME XII



NUMBER 3

SAN FRANCISCO

1926

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IN THE GIANT FOREST—CIRCLE MEADOW  
Photograph by Walter L. Huber



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VOLUME XII



NUMBER 3

SAN FRANCISCO

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## THE HIGH TRIP OF 1925

BY BERTHA CLARK POPE



"When we gods were young we made all lands and seas, and some of us were herdsmen and drove flocks of suns and stars away to pasture in space. It was only later we made man—when we had learned to be peevish and ingenious. But I was a mountain-maker. I know all the writing on the flanks of mountains. The stuff of mountains is such gracious material . . . so luminous with sound . . . so sonorous with color. Mountains are like bells—they are tuned like bells. You'd know what I mean if you had made them. When a mountain is well made, even an incurably mortal ear can hear the bell-note sometimes—especially when it rings to the touch of the last ray of the sun. A good mountain should be on a crescendo note. You put all the gentleness of your theme into the lower slopes, making them fit for mosses and grass meadows—meadows that are stroked with silver by the blowing of a summer wind. Then as you add alp to alp and precipice to precipice, you mix the earth of stronger stuff—soil that will hold strong sharp trees upright so that their crests tear the cold mists to shreds. But the peak of the mountain has only to support the delicate memorial of perpetual snow. The peak is the ordeal of the creator. It is naked line, of course—a poor workman cannot cover up mistakes with easy trees. The peak must be eccentric and terrible and . . . witty, if you know what I mean. An epigram of a peak is best. Gods are so often judged by the peaks they throw against the sky."—STELLA BENSON: *The Awakening*.

CERTAIN things—greatest things—cannot be described; they can only be experienced. St. Paul telling of a man caught up into paradise cannot go into any detail; the fullest report he can make is that he "heard unspeakable words which it is not possible for

a man to utter." The lover with head in the stars, dreaming he shall not taste of death, by talk merely makes himself ludicrous to his companions. Who shall expound a Sierra Club trip? Your friends gather round. "What did you *do*?" You try to tell them. "But didn't you get *wet*?" they interrupt. "Why—er—yes," you answer, looking as if you had some inner, precious secret. "And would the rest have anything to do with you in such clothes? Didn't you take along anything dainty to slip on when you came to the hotels?" "Why—er—no," you babble, looking maudlin; "but—er— Oh—we climbed—we saw—" They go blessedly away and leave you to your memories.

So this account of the Sierra Club outing of 1925 is no account. It is but a string on which to hang your own experiences, merely shibboleth with power to evoke the past in the minds of you, the elect, the initiate. To all others it can mean nothing.

A Somerset folk-song that Elizabeth Witter sang several times at camp-fire makes a sufficiently good *apologia pro mea vita Sierrana*. Let it be considered as a gentle accompaniment continuing throughout the action of the play:

"What makes you leave your house and land?  
What makes you leave your money, O?  
What makes you leave your new-wedded lord?  
To go with the wraggle-taggle gipsies, O!

"What care I for my house and land?  
What care I for my money, O?  
What care I for my new-wedded lord?  
I'm off with the wraggle-taggle gipsies, O!

. . . . .  
"What care I for a goose-feather bed,  
With the sheet turned down so bravely, O?  
Tonight I shall sleep in a cold open field,  
Along with the wraggle-taggle gipsies, O!"

So being immovably of that mind we all got our Sierra Club paraphernalia from the box in the garage or the bag in the wall-bed closet or whatever makeshift it is that now supplants the good old-fashioned attic. Yes, we got it out, and we regarded it more or less dubiously. But as we regarded, as we were inspired with notions of cunning weight reductions, especially as we haunted camping-goods, hardware, and five-and-ten-cent stores, we became first assured and then exalted. We were somewhat deflated, certainly, when we finally



weighed the mass on the friendly drug-store scales, but we deflated the mass and felt proportionately better.

And oh! that day when we finally put on what was intended to be put on—that was about half the aggregation—and rolled up our shelter; bed; extra shoes; extra wardrobe for four weeks, business and society; soap, laundry and toilet; kits, writing, sewing, and medical; library, technical and *belles-lettres*; gastronomic delicacies and so on—that was the other half—and said good-by to our families!

"It seems a day . . .

One of those heavenly days that cannot die;  
When, in the eagerness of boyish hope,  
I left our cottage-threshold, sallying forth  
With a huge wallet o'er my shoulders slung,  
. . . and turned my steps  
Toward some far-distant wood, a Figure quaint,  
Tricked out in proud disguise of cast-off weeds  
Which for that service had been husbanded,  
By exhortation of my frugal Dame—  
Motley accoutrement, of power to smile  
At thorns, and brakes, and brambles,—and, in truth,  
More ragged than need was!"

—So William Wordsworth more than a hundred years ago, in lines which qualify him for membership in the club.

And then as in a dream we were in a long line, the cynosure of neighboring eyes, in a railroad station somewhere, and then in a Pullman car, still as in a dream till a four-o'clock call at Exeter, doubtless benevolently intended to get us inured to hardship, no other reason appearing. Then, after a goodly motor-trip, presently we were plodding along a dusty road through Giant Forest to our first camp at Wolverton Creek.

Possibly we all kept our city gait and some of our city thoughts in the next two days while we plied our insect activities under the gravely conscious giant sequoias. Not yet had we left civilization entirely, not yet shall we dignify by the term "side trips" those saunters to Moro Rock and Alta Peak. This seemed but the gathering of the clans and the prelude. All the good camp-fires that were to be were presaged in those first evenings. Cedric Wright and Dorothy Dunyon played violins—are violins ever so poignant as under fire-lighted great trees?—there was community singing, interesting talk by Mr. Colby, "comic relief" by Mr. Tappaan, a fine

talk by Judge Fry on the life history of the *Sequoia gigantea*, and one by Colonel White, Superintendent of the Sequoia National Park, on his work. "The Sierra Club," he said, "is the truest democracy left in America. It is America as it was."

But in the gray dawn of the 13th, when that strange cry rang out, when we weighed our dunnage for the first time on the official scales and found how dismayingly severer was their standard than that of the aforementioned friendly drug-store, when we gave with explicably lavish hand our dearest treasures to anyone within reach, when we all—one hundred pack-animals, one hundred and eighty Sierrans, *and* four Appalachians (trumps they were, too!)—set our faces toward the hinterland, where there are higher mountains and purer skies, then everything was different. The route lay across Marble Fork, Willow Meadow, Silliman Creek. This day saw the first of those alpine meadows that were to make the days to come so beautiful. In these the cyclamen (*Dodecatheon*) was particularly large and tall, and with the abundant white alpine smartweed gave the effect of an old-fashioned garden full of flowery spires. For the sake of the tenderfoots (or -feet?—neither ever sounds correct, yet in our case both seem applicable) that first trek was planned mercifully short, so short that the impetus of certain ardent souls swept them onward a considerable distance. All, strenuous and un-strenuous alike, slept at Clover Creek that night—or, at any rate, they went to bed.

That was the last night on the entire trip, however, that the entire party was together. Next morning the first knapsackers set out with Francis Farquhar and Bob Lipman up over J. O. Pass, down Sugarloaf Creek to Roaring River, and down the wall of Kings River Cañon, rejoining the club the second day after. The majority went up over J. O. Pass to the next main camp at Horse Corral Meadow.

At the camp-fire that evening—July 14th—we sang the *Marseillaise*, listened to a most informing talk by François E. Matthes, of the United States Geological Survey, on the geology of the region to which we were going, and then, trustfully, with our wardrobes and earthly possessions spread out under the starry twinkling eye of kindly heaven, we all went to bed and to sound slumber. Up came one of the most complete and magnificent electric storms imaginable. The lightning was none of that mild yellow glimmering we sometimes know in the lowlands; it was deadly white, like liquid iron



poured in the foundry; the thunder was no agreeable bass growling in the distant horizon; it was a crashing, cracking, terrific tearing of the heavens as if they were silk, and simultaneously of the shuddering branches of your particular tree—obviously the tallest in the region. Also the rain was of an unusual wetness. Without doubt there was considerable hasty activity in every quarter, but not a human sound arose from all the camp. It was uncanny. To be lying still in a pool with rain and white fire and torrential thunder pouring down—and nowhere to go! Personally, I wanted refuge; geographical, if possible! if not, then spiritual. I remembered that the wise say great literature affords this, but the only memory gems I could muster at the moment were a scrap from Horace:

"Saepius ventis agitur ingens  
Pinus . . . feriuntque summos  
Fulgura montes."

And, worse yet, this from Browning:

"And ever anon some bright white shaft  
Burned through the pine-tree roof, here burned and there,  
As if God's messenger thro' the close wood screen  
Plunged and replunged his weapon at a venture,  
Feeling for guilty thee and me: then broke  
The thunder like a whole sea overhead."

Neither seemed precisely the reassurance I was craving.

The morning was gray and threatening, and one stood, damply, at breakfast, but everyone seemed happy in the opportunity of voicing his impressions of the storm. And as the day advanced it was clear and beautiful. The trail was long, but it was downward, and wonderful views were to be had by a little side scramble up Lookout Peak and all along the old trail down the side of the cañon. There was one heavenly little stream with a pool and waterfall, all set in ferns and trees and sparkling moss, where sooner or later most pilgrims came to kneel. And, of course, there was the rushing river for a judicious swim, but somehow these cool delights were forgotten in that last dusty, interminable seven miles along the valley.

Camp was made at Kanawyers in the Kings River Cañon. Here for four days by that swift green river were all the delights of a fixed Sierra Club camp, which, it may not be generally known, are climbs, swimming, and song. Also there are laundering parties: for a picture of fundamental democracy, regard, say, the colonel, the co-ed,

the millionaire, the professor, chummily washing their garments in borrowed pails with one bit of soap in common. And the rapture of mere solo bathing in soft cold mountain water has never been sufficiently sung. Those emerald, those aquamarine floods are soft and soothing as chilled velvet, exhilarating as sparkling light. As a small child I used to play with a boy named "Bill," who had an ill-concealed contempt for the weaker sex as he knew it. At the age of eleven, he wrote a poem setting forth the disadvantages of girls. I remember two withering lines:

"They cannot climb up trees for fruit,  
Nor bathe without a bathing-suit."

Across the years we salute you, Bill, and tell you times have changed.

It must be admitted that at this camp—and others—the club had frequent opportunities to enjoy that much overestimated privilege of Joyce Kilmer's tree—"Who intimately lives with rain." There was in particular one combination camp-fire and cloudburst arranged by the management where human nature shone at its brightest and best. Besides, it is the part of wisdom to remain contented on a spot you have kept dry with your sheltering form rather than to go "home" and try to warm up a wet one.

From this camp at Kanawyers a number of side-trips were made. Four different groups climbed Mount Brewer (13,577), one of which carried up a new Sierra Club register and brought down the old one for safe-keeping. About sixty, under the leadership of Dr. and Mrs. Thompson, set out for Paradise Valley, whence a party of eleven, led by Huber, split off to go to Woods Creek. Here packs were left while they hurried up to have a glimpse of Rae Lake. On their return to the creek they found it swollen by recent rains and the log crossing swept away. After vain efforts to effect a crossing, several were forced to remain all night on one side of the stream in sight of the rest *and* the supplies on the other. Rennie tossed across canned beans and beef, with Scotch thrift first getting the range with stones. Bedless, the exiles slept on relatively dry needles under a yellow pine, stoking their night-long fire. At dawn a log was got across, forces were joined, and on they went over Pinchot Pass, and down Cartridge Creek, on their way to Simpson Meadow.

Another party from Kanawyers, led by Farquhar and Lipman, went to Rae Lake by way of Bubbs Creek and Glen Pass. "Rae



Lake is always beautiful and we were reluctant to leave. Rusty had to leave, nevertheless, as she was bound by contract to reach Paradise Valley by dinner-time. So she gathered together a well-balanced ration suited to the needs of a growing girl, and, waving a fond farewell, sped down the trail. A few hours later the rest of us packed up, and as we distributed the food packages we noticed an unclaimed bag of lunch. We checked over the food and found she had run off with our bag of apricots."—So reads the journal of one of the party.

The de-apricoted group then made its way over Pinchot Pass—Lee Stopple climbing Mount Pinchot (13,471)—camping at Bench Lake; thence over Cartridge Pass to camp at Marion Lake, and finally regathering at Simpson Meadow.

This region, usually "occult, withheld, untrod," seemed almost to need a traffic officer in those July days. Let us quote again from the aforementioned journal: "Up from Marjorie Lake came a strange thing. Like a nightmare it seemed at first, but soon it became distinct beyond all doubt. A canoe, full length, green, riding upright on the back of a mule, bow and stern bobbing up and down, but evidently securely lashed. Three riders, and a man who scrambled about on the rocks, taking motion pictures. They denied being a motion-picture outfit, but we afterward learned that they were Jesse Lasky and son, and that we were right in our recognition of the Hollywood touch. The packing of the mule was handled with remarkable skill and the mule behaved splendidly. The canoe rode on two parallel poles, wrapped and padded, with a webbing over the animal's head. We watched the descent of the eastern side of the pass with keen interest, for on this steep winding trail came the real test; but as long as we could see them the mule and its load were progressing safely. It appears that Lasky had the canoe brought over Sawmill Pass to Woods Lake for the fishing and had then gone on to Marjorie and Bench lakes. He was on the way back to Woods Lake when we saw him. He remarked to us, with a subdued note of pride in his voice, that he thought it was the first time this thing had been done."

And at Marion Lake four parties were gathered: the Huber party, the Farquhar-Lipman party, another of men from New York, Palo Alto, Watsonville, and San Francisco, and another of two eastern boys and their outfit—thirty-eight people, all told, more than ever before at one time, so far as is known.

On the morning of the 20th the majority of the club remaining at



Kanawyers arose after shower-baths served in bed, took breakfast standing, for the sake of drainage facilities, and set their faces toward Granite Basin. To do this they must have turned them straight up, for the ascent for the day was 5490 feet, although the miles were but five.

The Granite Basin camp, at an altitude of 10,400 feet, was a strange beautiful place, with gray rock scenery that looked like that of the moon. There was a moon, too, shedding a weird loveliness down upon our camp-fire gathering. And that night a heavy frost. In the morning the few long-haired women had to shatter the ice from their rigid locks while the bobbed-hair sisterhood was jauntily off for hot coffee.

Simpson Meadows for the next four days were Elysian fields in which the Blest wandered. It is impossible to ascribe cause for the pure and peculiar happiness one feels in the High Sierra. Of course, freedom from care and distractions, a natural life in the open, constant draughts of intoxicating air, are potent. Then, too, for once in one's life one may be non-competitive, non-acquisitive; a blackened tin tomato can, a few prunes mixed with dried beef crumbs in a bandana, a divine scene, the laughter of a friend—these seem to be the elements of a perfect happiness, refined of circumstance; happiness having the quality of the sparkle of a mountain stream, the crystal atmospheric overlay on glittering foliage, the peace the Redeemed know their first day in Paradise.

Well, anyhow, on the 22d a party went to Tehipite, and another on the 23d. On the 24th we all climbed Mount Woodworth (12,214) with Colby's little group—by means of opera-glasses or the naked (baffled) eye. The great outstanding society event of the trip was the delightful Simpson Meadow tea and musicale, to which all the club were invited by their generous hosts, Mr. and Mrs. Drew. This was followed by the Annual Bandana Show, with many entries of both pedigreed and common alley stock.

On the 26th the club moved from the Meadows to the junction of Palisade Creek and the Middle Fork of Kings River for yet four more days of camp. The trail was rocky, beautiful, and afforded excellent fishing along the way. On this day also two parties set out for Marion Lake, by Dumbbell Lake, over Observation Pass, sliding down snow-slopes, to rejoin the club at its next site. Surgeons' plaster is a good substitute for a sewing-kit.



KEARSARGE LAKE AND KEARSARGE PINNACLES—HEADWATERS OF KINGS RIVER  
Photograph by Ansel E. Adams





GLACIER DIVIDE—BETWEEN EVOLUTION CREEK AND HUMPHREYS BASIN  
Photograph by Lee L. Stopple



This Palisade Creek camp had a beauty different from that of any of the others. It was in a narrow cañon walled steeply by gray granite slopes. At night, after the crescent moon had set, for a long time a silver reflection cut sharply athwart the blackly shadowed sides. Later, as the argent light slid upward to the peaks and was gone, the cañon filled with blackness, and in the black sky hung stars of incredible size and brilliance. Then, perched on one's ledge, one could know what Waldo feels in "The Story of an African Farm": "I will tell you," he added in a still lower voice, "where I could pray. If there were a wall of rock on the edge of a world, and one rock stretched out far, far into space, and I stood alone upon it, alone, with stars above me, and stars below me—I would not say anything; but the feeling would be prayer."

One party went with Mrs. Thompson to Deer Meadow, from which place three groups climbed Mount Sill (14,100), first ascended by J. N. Le Conte's party in 1903. The records showed no other ascents since that time. The North Palisade (14,254) was climbed by four parties: Colby's, Rennie's, Clyde's, and Gossom—if one may call him a party. The Middle Palisade (14,049) was climbed by Huber, Price, and Marble. Only seven people had ascended previously.

There was also an expedition into the Dusy Lake region, and another up to Bishop Pass. In short, the Sierra Club was spread all over the Sierra. It is said that a group would climb some remote peak only to find that upon all the remoter peaks in sight a similar group was discernible. "The woods were full of 'em," and only an omniscient chronicler could account for all.

At Little Pete Meadow the next camp was made on the 31st. The trail was short—perhaps four or five miles—through grassy meadows rich with flowers: tall blue larkspur, leopard lilies, orange-red Indian paintbrush.

To the west of the river rose the beautiful dull-orange mass of Langille Peak. Refreshing showers fell at pleasing intervals—intervals in which many a song was sung and many a trout gave up the ghost.

Next morning the caravan went up over Muir Pass, through Evolution Basin, down to the next fixed camp at Colby Meadow. Muir Pass (12,099), while not one of the highest, is strangely spectacular. It seems the terrible and desolate setting for some Titan tragedy—an

effect heightened by the black rain- and hail-storms staged for our flight over it.

An interesting description of Evolution Basin by Theodore S. Solomons, its discoverer, appears in *Appalachia* for January, 1896: "Many large lakes lie in the basin's trough, some few bright with limpid water, others glimmering with snow and little icebergs, others still dull with a thick coating of ice that the long siege of the mid-summer day's sun is incapable of dissipating.

"Such is the birthplace of the San Joaquin; such the origin of that river which turns a hundred mills, irrigates a million acres of grain, fruit and vine, and which imparts fertility and beauty to the largest and richest of California valleys. The Sierra Crest is nowhere grander, and nowhere more generous is the recompense that awaits the wearied traveler."

From Muir Pass two parties climbed Mount Goddard (13,555), led respectively by Lipman and Clyde, and accompanied by rain, snow, hail, and lightning. The Kehrlein party, also Harry Miller and a companion, made the ascent from Colby Meadow. On a side-trip from Muir Pass, Huber and Rennie ascended Mount Powell (13,361), finding no evidence that it had been climbed before.

From Colby Meadow several parties ascended The Hermit, and Rennie and Clyde independently climbed its final turret. A small party knapsacked to Evolution Basin, and next morning, under the leadership of Mrs. Mack, climbed Mount Spencer (12,428). Colby led a party up the ridge to look over into Humphreys Basin, full of glacial lakes, with Mount Ritter and Banner Peak rising in the distance. A spectacular avalanche on Mount McGee lasting three or four minutes was seen by this party and also by the Huber party from The Hermit.

Lower Blaney Meadows saw us encamped August 5th. Everyone felt time was all but up. Inevitably, reluctantly, we were approaching civilization. So we held a sort of Preparedness Day by being ultra-civilized. French chefs of marvelous suavity and even more marvelous accent served our dinner; at the camp-fire there was a French duel; and then, through the genius of Mrs. Earnshaw, a Fashion Show that would make Deauville look like Old Home Week.

The next day we trekked on through Camp 63 and beheld once more the works of man: shacks and automobiles, paved roads and a tunnel of unheard of dimensions; hearts sinking the while, inward

orchestras making the final flourishes which indicate that the music is shortly going to stop. And that evening by the side of the paved road and a watering-trough—O vanished mountain torrents!—there was a beautiful last camp-fire, our guests of honor, Paul Redington, United States District Forester, in charge of the forests of California and Nevada, Supervisor Benedict, of the Sierra National Forest, and District Rangers Poore and Seeley—who had made for the club the gracious plan for a better last camp than we would otherwise have had. A brilliant Freshman play, ably managed by Mrs. Tibbitts, a clever “radio” number, cordial speeches, warm thanks from Mr. Colby, warm thanks to Mr. Colby, last music by “Wright and Co.,” last songs by Elizabeth Witter, last songs by us all—good-by! good-by!—and we lay down on the ground for the last time with the wrangle-taggle gipsies, O!

But when does a Sierra Club trip end? With the last great peak? or the last long trail? or the final camp and farewells? Surely it does not end with any one of these; surely in the years to come it does not end. From time to time we shall live again “hours when from the circling faces, veils pass, and laughing fellowship grows warm”; we shall hear again that mountain bell-note ringing to the touch of the last ray of the sun; see meadows stroked with silver, peaks terrible and eccentric thrown against the sky.



*The climbing of mountains  
takes one's breath away, though it may be  
rendered less unpleasant by agree-  
able conversation.*

JOHANN JACOB SCHEUCHZER

Zurich, about 1716

(Gribble, *The Early Mountaineers*, 1899)



## KINGS RIVER CAÑON AND YOSEMITE VALLEY \*

By F. E. MATTHES, U. S. GEOLOGICAL SURVEY



IT is not without some hesitation that the writer ventures upon this theme. For he is mindful of the truth there is in that well-known saying about comparisons. Nor would he essay any comparison of the Kings River Cañon and the Yosemite Valley as two masterpieces of nature's handiwork. That is a task for a more gifted pen than his. Besides, there is no need, for it has been done, and well done, by acknowledged masters. What he proposes to give in these pages is a comparison of the outstanding features and characteristics of the two chasms as a geologist understands them.

Perhaps it should be added, as a geologist *of the present day* understands them, for we have now at our disposal a wholly new branch of earth science—a branch that has developed almost entirely since the eighties of the last century—geomorphology, the science of the evolution of mountains and valleys and the surface features of the earth in general. Its application to the Sierra Nevada already has yielded a veritable harvest of new knowledge; it has given us an insight such as was impossible heretofore into the history of the development of the varied landscape features of that range—not only during the Ice Age and since its close, but also during the long stretches of time that went before. The Yosemite Valley has been studied in particularly close detail, and as a result we can now trace its evolution back through successive stages all the way to its beginning in a remote geologic period. The Kings River Cañon, it is true, has been accorded thus far little more than a reconnaissance, yet the salient facts of its history now also stand revealed, the key to them being furnished by the research that has been done in the Yosemite region and in other parts of the Sierra Nevada. What is to follow here, then, is an interpretation of the resemblances and differences between the two chasms in the light of this new knowledge.

First, let us see what the main points of resemblance and difference are. As is generally agreed by those familiar with both chasms,

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VIEW DOWN YOSEMITE VALLEY FROM TRAIL ABOVE UNION POINT

Showing the broad U-shape of the chasm

Photograph by Charles E. Townsend





VIEW DOWN KINGS RIVER CAÑON  
Showing its pronounced Yosemite-like character  
Photograph by J. N. Le Conte



the Yosemite Valley and the Kings River Cañon\* are most closely similar in their larger modeling, less so in their detail sculpture, and least in their environmental setting. Both are hewn like gigantic troughs, steep-sided, level-floored, and remarkably constant in width throughout, although more or less sinuous in course. In cross-section they are broadly U-shaped, in contrast to the other great cañons of the lower Sierra, which are prevailing V-shaped. They are even more broadly U-shaped than the typical glacier troughs of the High Sierra, which are among the most perfectly modeled of their kind.

Indeed, it may well be said that their broad, level floors, which beckon to us with their charming sunlit groves and the sublime vistas of cliff and peak which they afford, largely make these yosemites what they are to us and what no narrow-bottomed gorge, however profound, can be.

Both the Yosemite and the Kings River Cañon, be it observed further, are limited in extent strictly by their floors. At the lower end each narrows down to an essentially V-shaped cañon, no wider at the bottom than the channel of the river (Fig. 1). And at the head each branches abruptly into two lesser cañons—or, to put it differently, each chasm commences abruptly on a grand scale of its own, the branch cañons opening into it by separate portals and at different levels. And so the Yosemite and the Kings River Cañon both have the appearance of being complete in themselves, set off from the cañons above and below, although in reality they are but short links in extensive cañon systems.

Upon closer inspection, nevertheless, the Yosemite and the Kings River Cañon are found to differ appreciably in their proportions—their ratios of length, width, and depth. The Yosemite is seven miles long, on an average three-fourths of a mile wide from cliff base to cliff base, and two miles wide from brink to brink; and it has a depth of 3000 to 3500 feet from brink to floor. The Kings River Cañon, on the other hand, is nine miles long, on an average only about three-eighths of a mile wide from cliff base to cliff base, and but slightly over one mile wide from brink to brink, in so far as it can be said to have any brinks. Its depth below the same ill-defined brinks ranges from 2000 to 2500 feet. The Kings River

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\* Here is meant, of course, that broad-floored stretch of the South Fork cañon which extends from the mouth of Bubbs Creek westward to Cedar Grove—the “Kings River Yosemite” of John Muir. (See U.S.G.S. topographic map of Tehipite Quadrangle.)

Cañon, therefore, though two miles longer than the Yosemite, is only one-half as wide and two-thirds as deep.

The cliffs in both chasms are distinguished in general by the same massive, monumental style of sculpture; but a comparison of individual rock-forms must naturally result in favor of the Yosemite. Nor is this because of any real deficiency in such forms in the Kings River Cañon, but rather because of the matchless wealth and variety with which the Yosemite is endowed. No other chasm on this continent, nor perhaps on any continent, possesses within so small a compass so remarkable an assemblage of uniquely sculptured cliffs and monuments.

The upper part of the Kings River Cañon, however, is no distant rival; its Grand Sentinel and North Dome, though not quite so clean-cut as comparable forms in the Yosemite, are fully as majestic and impressive; and the Sphinx, were it situated in the tourist-thronged and well-advertised Yosemite region, no doubt would have long since become known the world over as one of its striking landmarks. But the lower part of the cañon possesses few sculptures of equal distinction. Some of its cliffs are of noble proportions, but they are not of the kind that stand out in the memory forever.

In another respect also, it must be admitted, the Kings River Cañon cannot compete with the Yosemite—namely, in wealth of waterfalls. It possesses really but one cataract of note, that of Roaring River; and that cataract is to be measured only in tens of feet, whereas the falls in the Yosemite Valley are measured in hundreds of feet.

This lack of falling waters in the Kings River Cañon is of peculiar interest, in that it is due in large part to the scarcity of typical "hanging valleys"—that is, tributary valleys opening abruptly at a considerable height above the floor of the main chasm. In the Yosemite region "hanging valleys" notably abound. Typical examples are the valley of Yosemite Creek, which opens at a height of 2565 feet; the valley of Ribbon Creek, which opens at a height of over 3000 feet; and the valley of Illilouette Creek, which opens at a height of about 1800 feet. From their mouths leap the glorious waterfalls for which the Yosemite is famed. The streams tributary to the Kings River Cañon, on the contrary, have nearly all cut their valleys down to so great depth that they debouch at or but slightly above the level of its floor.



True hanging valleys, nevertheless, are not wholly wanting in the Kings River region: the valley of Bubbs Creek, for instance, opens at a height of fully 1400 feet; the valley of Copper Creek, at a height of 2000 feet; and the valley of Granite Creek, at a height of at least 1200 feet. But their streams, instead of leaping down in spectacular falls, descend in broken cascades ensconced in narrow, slot-like gorges.

The prevailing depth of the Kings River's tributary valleys, again, is intimately linked with the extreme ruggedness of its flanking heights. These contrast with those of the Yosemite Valley as mountain peaks contrast with foothills. The Yosemite lies between unimpressive, billowy uplands, the individual swells on which are only 1000 to 1500 feet high—only one-third to one-half as high as the chasm itself is deep. The Yosemite is therefore easily the dominant feature of its district; there is little in its environment to distract the eye from it. The Kings River Cañon, on the other hand, is surrounded by a galaxy of peaks and crests many of which tower 4000 and even 5000 feet above its brinks—to twice the height of the chasm's own walls. To one who surveys the landscape from Lookout Point the disproportion is at once apparent, and yet, *mirabile dictu*, the chasm does not seem dwarfed, it loses not one jot in majesty, but rather gains by reason of its stupendous setting. And does not therein lie the real test of its inherent scenic grandeur? A chasm less sublime would sink into insignificance amid such titanic surroundings.

And now let us see how these various facts are to be explained. Through what circumstances is it that the Kings River Cañon and the Yosemite Valley have come to be so closely alike in some respects, though so unlike in others?

To begin with the most obvious: Both chasms unquestionably owe their broad trough form to repeated and intense glaciation. Their almost uniform U-shape and their sheer, spurless, parallel sides are characteristic features of glacier channels. But this does not necessarily imply that the chasms are products of glacier action alone or even mainly; it is clear from the positions of the moraines, as well as from many other things, that the chasms are stream-worn cañons that have been remodeled and enlarged by the ice, the transformation from the original V-shape to the final U-shape having been brought about by widening fully as much as by deepening.

Just what proportion of the total work of excavation in either



chasm is to be attributed to glacier action and what proportion to preglacial stream action has long been a moot question, but today we are for the first time in a position to give the answer, for the Yosemite at least, in rather definite quantitative terms. For it has been found possible to determine the preglacial depth of that chasm within narrow limits, and consequently it is also possible now to compute the amount of rock that was excavated by stream and glacier respectively.

Indeed, the Yosemite is probably the first glaciated cañon whose preglacial dimensions and configuration have been ascertained in some detail.\* Three favoring circumstances have rendered this possible: the presence of certain features in the Yosemite Valley that are fairly reliable indices of its preglacial depth; the availability of a topographic base of adequate accuracy for necessary measurements of height and distance (the map which the writer prepared in 1905-06); and the granting by the U. S. Geological Survey of sufficient time and funds for an intensive study of the problem.

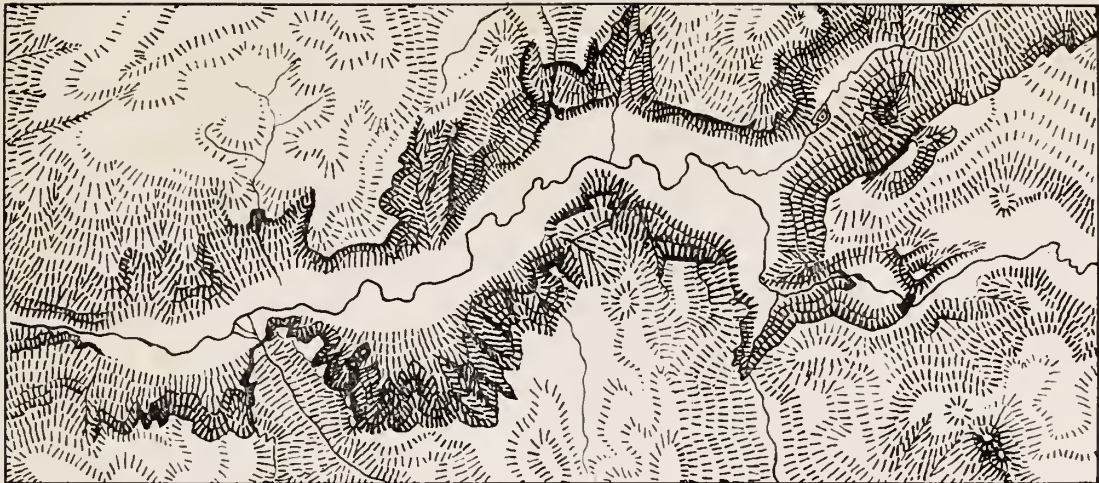
As a result it can now be stated with some confidence that the Yosemite, prior to the advent of the glaciers, was fully 2400 feet deep, measured from the brow of El Capitan, and 2000 feet deep opposite Glacier Point. The additional deepening effected by the ice, therefore, ranges from 600 feet at the lower end to more than 1200 feet at the upper end of the chasm.

For the Kings River Cañon no such definite figures can be given; indeed, it is doubtful whether any can ever be determined. But from the preliminary studies it seems reasonably certain that the depth of glacial cutting in the cañon was less, on the whole, than in the Yosemite, save at the extreme head, where it was about the same in both.

A word, next, about the broad, level floors that distinguish the Yosemite and the Kings River Cañon from the typical U-troughs of the High Sierra. These floors are not products of glacial excavating, but due in each case to a filling of loose *débris* that conceals the bottom contours of the U-trough. In the Yosemite the rock floor was scooped out by the ice in the form of an elongated basin, presumably about 300 feet in depth—the basin of ancient Lake Yosemite—and this basin was filled with sand and gravel deposited by the Mer-

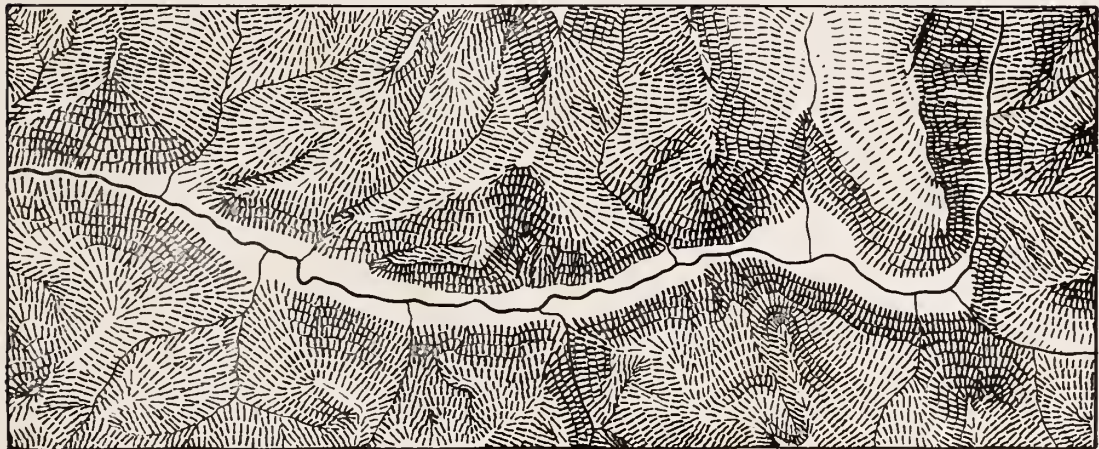
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\* In sufficient detail to permit the drawing of a contour map from which a relief model of the preglacial Yosemite chasm can be constructed.



A

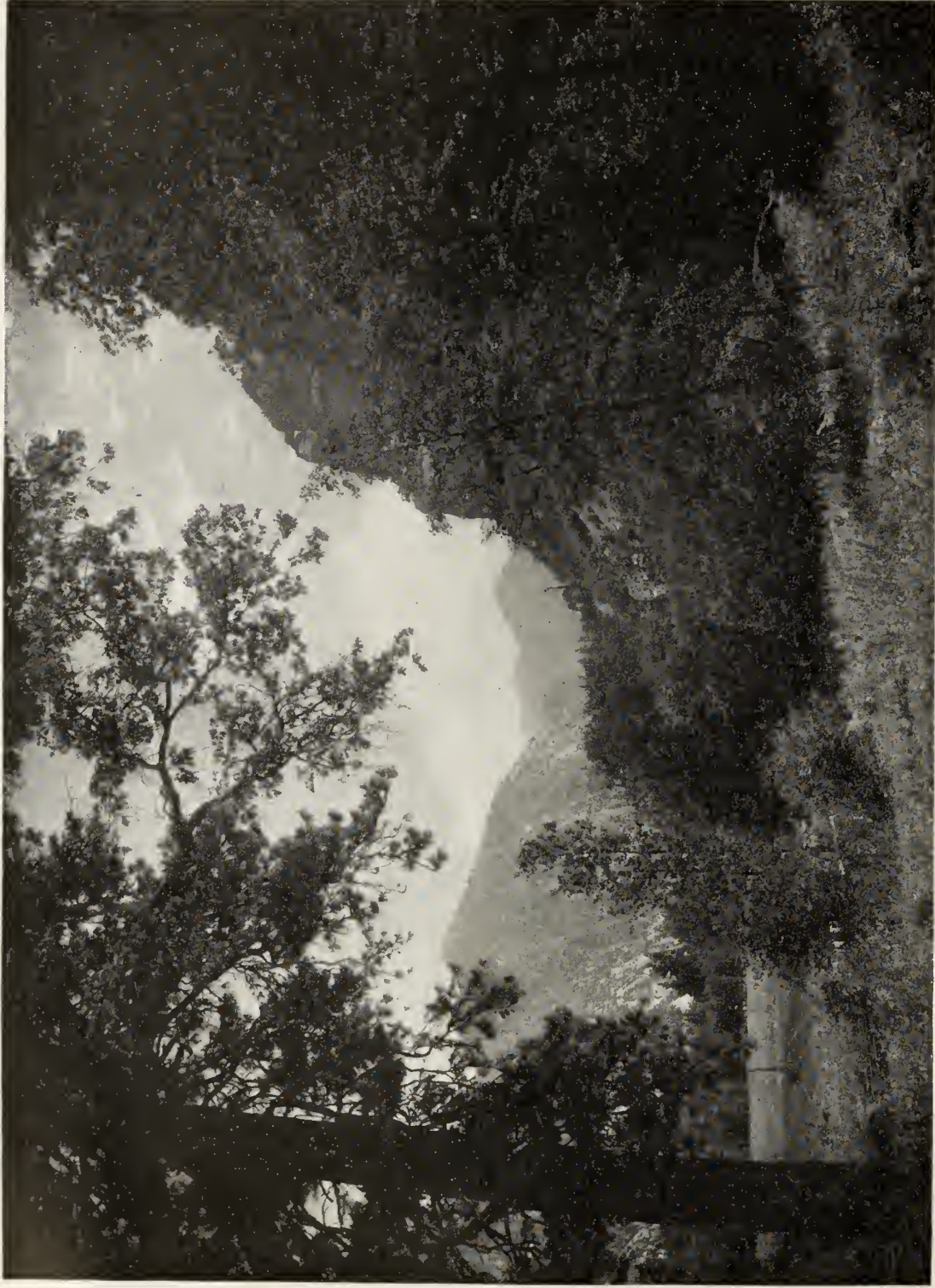
0 1 2 3 4 Miles



B

FIG. 1.—Hachure maps of Yosemite Valley (A) and Kings River Cañon (B), permitting a direct comparison of their main features. (The two maps are drawn on the same scale.)





IN THE HEART OF THE KINGS RIVER CAÑON  
Photograph by Ansel E. Adams



ced River. In the Kings River Cañon probably no basin was excavated (there may possibly have been a shallow one near the upper end), but during the final recession of the glacier the floor was left deeply encumbered with ice-borne débris. The Kings River Glacier evidently was much more heavily loaded with rock-waste than the Yosemite Glacier, and not only left one moraine loop after another, but between moraines liberated immense quantities of gravel and boulders, that were spread out in thick sheets by the torrents flowing from the melting ice. This outwash material now forms the greater part of the floor upon which one travels and camps; only the crests of the recessional moraines emerge here and there above it.

The difference in the nature of the filling in the two chasms accounts for the contrast in degree of flatness of their respective floors. The floor of the Yosemite is so nearly level that the eye can not detect its slope—it descends only twenty feet in a distance of five miles; whereas the floor of the Kings River Cañon descends 600 feet in a distance of nine miles, or at an average rate of sixty-six feet to the mile.

The great width of both chasms is due largely to the fact that the glaciers were able to “quarry” laterally to far better advantage in them than in the cañons above or below. This glacial quarrying was facilitated by the prevalence of “joints” in the rock—more or less regularly spaced fractures—whereby blocks of convenient size were made available for plucking and transportation. The cañons above and below, on the contrary, are narrow, because the rock in them was less generally fractured—in fact, for considerable distances it was wholly undivided—and as a consequence the glaciers could only grind and polish. And in the hard Sierra granites these abrasive processes work with exceeding slowness.

Another circumstance that doubtless contributed toward the production of the great width of the two chasms was the confluence at their heads of two powerful tributary glaciers. For it can be shown analytically that the consolidation of two or more glaciers into one is bound to result in a decided increase in economy of movement and a corresponding increase in kinetic energy (energy of mass movement due to gravitation) available for erosive action. But the importance of this factor should not be overrated, for there is ample evidence that a confluence of glaciers was not indispensable in every case in the Sierra Nevada for the production of a typical Yo-

semite. Instances are not wanting of such valleys whose heads are not marked by any junction of tributary glacier troughs. The Little Yosemite is a good example. In its case, certainly, the predominance of well-jointed and readily quarried rock is the prime factor that determined its great width.

Withal there are few places in the Sierra Nevada where the relative impotence of the ice when dealing with massive, undivided granite is more strikingly exemplified than in some parts of the Little Yosemite. Liberty Cap and Mount Broderick, the two great bosses that obstruct its mouth, stood directly in the path of the glacier, yet they have survived as gigantic *roches moutonnées*, each being essentially an unquarriable monolith.

There is, then, little doubt that both the Kings River Cañon and the Yosemite have been developed in places where the joints in the rock permitted glacial quarrying on an extraordinary scale. Their broad trough form, accordingly, is a "function," as mathematicians would say, of their rock structure. Of course, it is a function also of the quarrying power of the glacier. That the Kings River Cañon is only one-half as wide and two-thirds as deep as the Yosemite is due in part to the inferior quarrying power of the Kings River Glacier and only in part to the less quarriable nature of its rocks. Space does not permit here for the giving of a comparison of the Kings River and Yosemite glaciers. Suffice it to say that their relative magnitudes and quarrying powers are readily inferred from their respective moraine systems, of which the writer was able to make a comparative study in the summer of 1925.

The detail sculpture of the cliffs of both chasms also is intimately associated with the varying structure of the rock. Indeed, each type of sculpture is the expression of a definite type of structure, and because of the delicacy of touch of the postglacial sculpturing agents—frost, temperature changes, running water, snow-slides, ground water, and so forth—every local change and vagary in the structure has been brought out in *bas-relief*.

The massive, undivided granite in general gives rise to rounded domes and curving walls—it tends to assume simple flowing outlines, because it "exfoliates" at the surface in smoothly curving concentric shells. The jointed rocks, on the other hand, are caryed into prevailingly angular, faceted forms. And where these two types of structure intermingle in capricious fashion, there arise forms of un-



usual, striking individuality, monuments of unique design, such as Half Dome, Cathedral Rocks, the Grand Sentinel, and the Sphinx.

Two things account for the phenomenal array of bold and contrasting sculptural forms in the Yosemite Valley: the rather fortuitous assemblage within its compass of a number of differing types of rock, and the frequent occurrence of extreme types of structure in immediate juxtaposition. The upper Kings River Cañon owes its pronounced Yosemite-like sculpture likewise to the presence of granite of highly irregular structure; the lower part of the cañon, on the contrary, is cut in more evenly jointed rocks, and therefore is scenically less impressive.

What now may be the reason for the marked disparity between the two chasms in the matter of hanging valleys and waterfalls? In the last analysis it, too, is traceable to structural influences. The elevated hanging valleys of the Yosemite region are held up by massive granite exceedingly resistant to both stream and glacier erosion. One need but view the grand cliff under the upper Yosemite Falls to be convinced of this fact: most of its rock is wholly undivided to a height of a thousand feet, and what few master joints traverse the western portion are spaced hundreds of feet apart. On the other hand, the deeply cut side gorges of the Kings River Cañon, and the little gulches incised into the lips of its few hanging valleys, all traverse rocks sufficiently fractured to give the eroding agents a good hold.

But that, after all, is only a small part of the story. The significance of the hanging valleys themselves must be taken into account. They are the telltale features of the landscape that give us the key to the mysteries of the early history and the ultimate origin of the two chasms.

It has been commonly supposed that the hanging valleys whose waters pour into the Yosemite chasm are, like most hanging valleys in glaciated mountain regions, products of glaciation mainly; or, to state it more accurately, that they have remained suspended high above the chasm's floor largely because the feeble branch glaciers that occupied them were unable to excavate as effectively as the powerful Yosemite Glacier. Undeniably great disparity in eroding power between the main glacier and its tributaries was a potent factor in developing and accentuating the discordance between the main chasm and its side valleys, but one would greatly err in giving

it sole credit for producing the entire discordance in every case.

As far back as 1913, when the farthest limits reached by the Yosemite Glacier were for the first time definitely mapped by the writer, it became evident that hanging valleys occur not only within the glaciated area of the Yosemite region, but also outside of it. A number of them actually occur on both sides of the lower Merced Cañon, many miles below El Portal, in whose vicinity the glacier terminated. A similar state of things has since been found in the unglaciated lower portions of Tuolumne, Stanislaus, and San Joaquin cañons. The ancient glaciers did not reach within thirty miles of the base of the range, yet typical hanging valleys, with cascades tumbling from their mouths, occur within a very few miles of the foothills.

How are these facts to be accounted for? Were the side streams, perhaps, unable to trench as rapidly as the master streams? And if so, why?

The Sierra Nevada, it is to be borne in mind, consists of a huge block of the earth's crust that lies strongly tilted, with its eastern edge raised to a great height above its western edge. Whenever the slope of a block range of this kind is sharply accentuated by renewed earth stresses, the streams that run down its back, finding their paths appreciably steepened, will flow with greatly increased velocity and correspondingly increased eroding power. As a consequence they will rapidly deepen their beds and in the course of time intrench themselves in narrow gorges. But with this rapid trenching their feebler tributaries will be unable to keep step, and this is true especially of those tributaries which flow at right angles to the direction of the tilting, for they remain unsteepened and unaccelerated. Inevitably, therefore, the valleys of these tributaries will be left suspended high above the main cañon—they will come to be "hanging" valleys, simply as a result of the uplift of the range and without the intervention of glacial processes.

Precisely this is what has happened in the Sierra Nevada. The Merced, flowing, as it does, directly down the western slope, as a result of the last strong tilting movement has been accelerated to torrential speed and ever since has been actively intrenching itself in a narrow gorge. But only its larger tributaries have been able to keep up with this trenching, the lesser ones, and especially those arranged at right angles to the direction of the tilting, having remained suspended high above the main cañon.



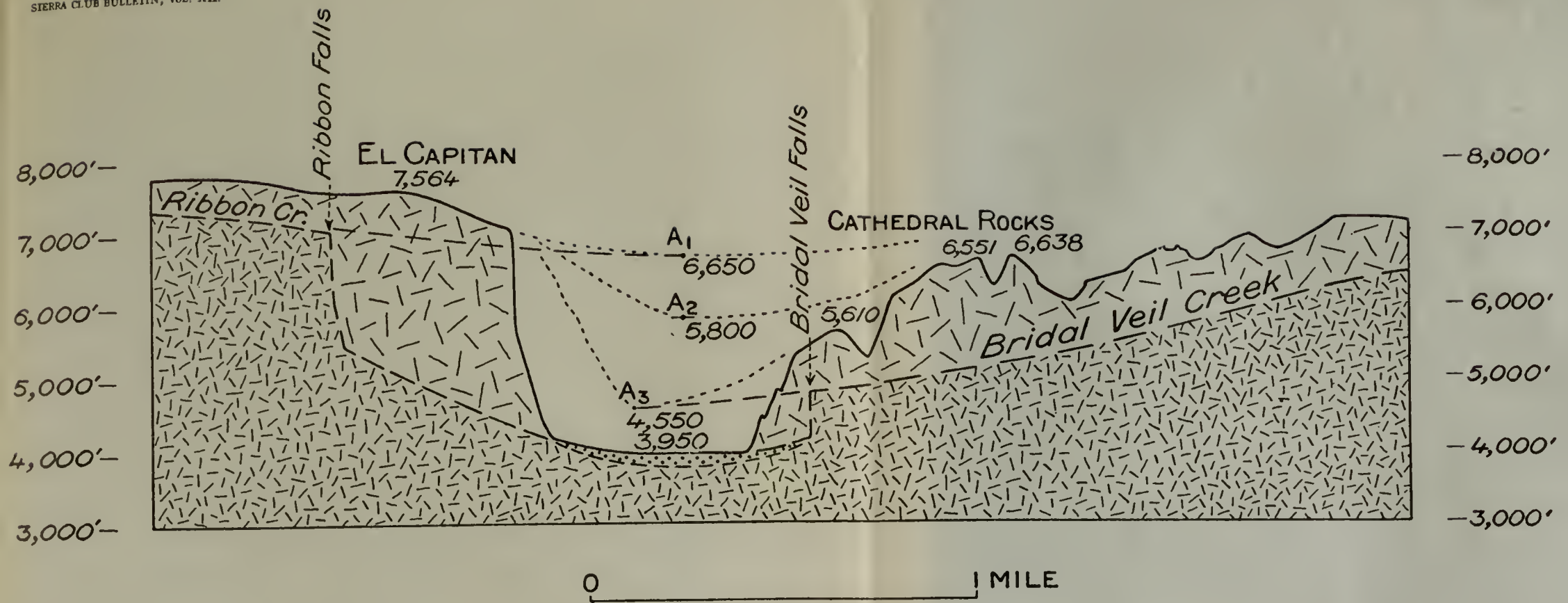


FIG. 2.—Section across Yosemite Valley from El Capitan to the Cathedral Rocks. Projected on this section is another drawn along Ribbon Creek and Bridal Veil Creek. The vertical and horizontal scales are strictly equal. By extending forward the profile of Ribbon Creek, whose hanging valley belongs to the upper set, there is found a former level ( $A_1$ ) of the Merced River;  $A_2$  is a lower level, indicated by the profiles of Indian Creek and the other hanging valleys of the middle set; and  $A_3$  is a still lower level, indicated

by the profile of lower Bridal Veil Creek, whose gulch belongs to the lower set. There are thus indicated three successive stages in the cutting of the Yosemite chasm,—what are believed to be the late Miocene, the late Pliocene, and the early Pleistocene. Glaciation did not set in until after the third stage ( $A_3$ ) had been reached. The dotted lines show the approximate form of the chasm at each stage.

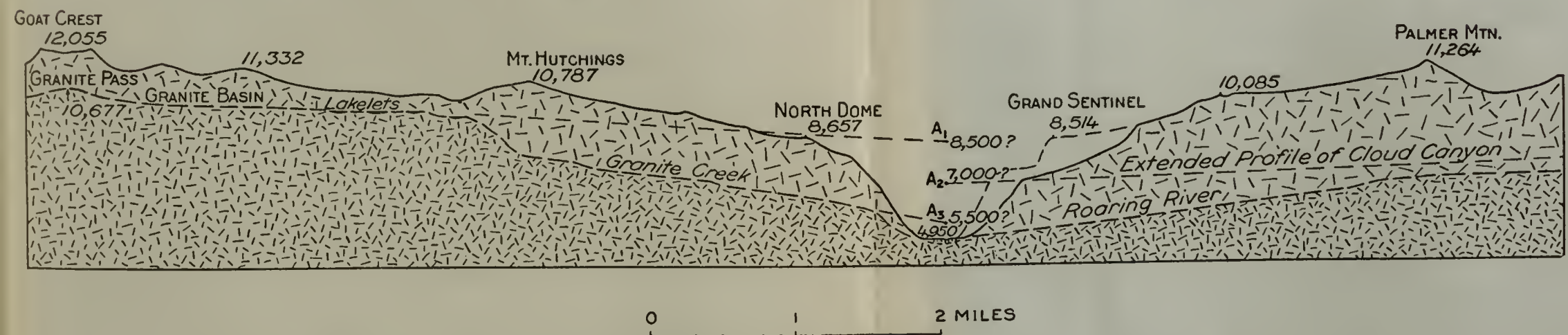


FIG. 3.—Section across Kings River Cañon from Goat Crest, on the Monarch Divide, over North Dome and the Grand Sentinel to Palmer Mountain. Projected on this section is another drawn along Granite Creek and Roaring River. The vertical and horizontal scales are equal.  $A_1$  represents what is believed to be the late Miocene stage in the de-

velopment of the chasm, indicated by the extended profile of Granite Basin;  $A_2$  represents the late Pliocene stage, indicated by the extended profile of Cloud Cañon; and  $A_3$  represents the early Pleistocene (preglacial) stage, indicated by the lower valley of Granite Creek. (All the determinations are necessarily tentative).





That this is the true explanation of the hanging side valleys of the unglaciated lower Merced Cañon there can be not the slightest doubt; but it is not so easy to decide in how far this explanation applies also to the hanging side valleys of the profoundly glaciated Yosemite Valley. To settle that question the writer plotted accurately to scale the longitudinal profiles of all these hanging valleys, as well as of those along the lower Merced Cañon. Then, by extending the smooth curve of each profile forward over the axis of the main cañon (in the manner shown in Fig. 2), he determined the former level of the Merced to which each side valley had been adjusted. (Of course a correction had to be made in each case for the erosion effected in the side valley by stream or glacier since it was left hanging, but the corrections required were as a rule quite small and not difficult to evaluate.) All the **A** points, finally, were plotted on a longitudinal profile of the main cañon, and here is what was found:

There are in the Yosemite region three distinct sets of hanging valleys, disposed at different levels one above another. The valleys of Ribbon Creek, Yosemite Creek, and upper Bridal Veil Creek belong to the upper set; the valleys of Illilouette Creek and Indian Creek belong to the middle set; the gulches of lower Bridal Veil Creek and Cascade Creek belong to the lower set. The **A** points of each set, moreover, are remarkably accordant among themselves and establish unmistakably a former profile of the master stream. There are thus three such profiles, each indicating a definite stage in the cutting of the chasm.

Now the middle profile accords closely with the profile established by the hanging valleys in the lower Merced Cañon. It follows that the valleys of Illilouette Creek and Indian Creek owe their hanging character in the first instance to rapid gorge-cutting by the Merced in consequence of the last Sierra uplift. These valleys were hanging before glaciation set in, but their height has since been greatly increased by the glacial deepening and widening of the main chasm. It follows, further, that the upper set of hanging valleys is also of preglacial origin—that is, it became suspended as a result of rapid gorge-cutting induced by an earlier uplift. Only the lower set of valleys, or gulches, owes its height above the floor of the chasm to glaciation.

*The story told by the hanging valleys of the Yosemite region, then, is a story of two long chapters of gorge-cutting by the Merced due*

*to two great uplifts of the Sierra Nevada, followed by a chapter of glaciation.*

The depth of the Yosemite at each stage being known, it is not difficult to draw its approximate cross-section for each stage (see Fig. 2), and to determine its relations to the surrounding country. In this way it has been ascertained that the chasm began its existence as a broad, flat valley only a few hundred feet deep, flanked by a lowland covered with rolling hills. The present billows on the uplands are these same hills lifted to a higher level. In the second stage the Yosemite had the depth and aspect of a mountain valley. It was cut about 1000 feet below the rolling country on either side and already had hanging side valleys from whose mouths the waters descended in broken cascades. In the third stage the Yosemite had the appearance of a rugged cañon with a narrow inner gorge, its total depth averaging about 2500 feet. It had two sets of hanging valleys, a high and a low one, and its sides consequently were adorned by many glorious cascades. Finally the cañon was profoundly remodeled—deepened and widened—by the glaciers of the Ice Age, and its cascades were transformed to leaping waterfalls.

There being no fossil-bearing deposits in the Yosemite region, the writer at first was at a loss to find a way to determine the geologic age of any of its preglacial stages. In 1921, however, he succeeded in carrying his work northward to the nearest locality where fossils are known to occur. This locality was none other than Table Mountain—the Table Mountain where resided Bret Harte's Truthful James! And there the writer was fortunate enough to be guided to the right spot by that veteran miner and lover of the earth sciences, Mr. J. B. Pownall, of Stockton and Sonora, and excellent casts of leaves from the hardened silts of a "fossil stream channel" were secured. Through the courtesy of Dr. John C. Merriam, again, the casts were submitted for identification to Dr. Ralph W. Chaney, Research Associate of the Carnegie Institution; and by him they were pronounced to be in all probability of late Miocene age. And thus it has been established, as definitely as is possible with the scanty palæontologic material at hand, that the earliest recognizable stage of the Yosemite Valley—that indicated by the upper set of hanging valleys—antedated the close of the Miocene epoch. In other words, it appears to go back to a time at least seven million years ago (according to the Barrell scale of geologic time). The first great



uplift, it may be presumed, therefore, took place about the dawn of the Pliocene epoch, and it was during that epoch that the first set of hanging valleys was produced. The second uplift took place probably about the close of the Pliocene, and consequently, by the beginning of the Pleistocene epoch (which included the Ice Age), the second set of valleys was suspended.

In the present landscape of the Yosemite region, then, the billowy uplands and their associated hanging valleys represent remnants of the ancient landscape of late Miocene time, preserved by reason of the exceedingly resistant nature of the massive granite. The valleys of Illilouette Creek and Indian Creek, which lie at a considerably lower level, are remnants of the Pliocene landscape, somewhat modified by glaciation; and the gulch of Bridal Veil Creek is a prominent feature of the early Pleistocene cañon stage of the Yosemite that has escaped destruction by the ice.

In the Kings River region, owing to the poor preservation of the hanging valleys, and also because of the lack of an accurate large-scale map, the successive stages in the development of the main chasm are much more difficult to determine. Nor is it easy to single out remnants of the Miocene and Pliocene landscapes on the flanking mountain massifs. Indeed, but for the guidance afforded by the analyses made in the Yosemite region and in other parts of the Sierra Nevada, probably little headway would be possible in the spelling out of the story of the development of the Kings River Cañon. As it is, however, much can be accomplished in spite of the existing handicaps.

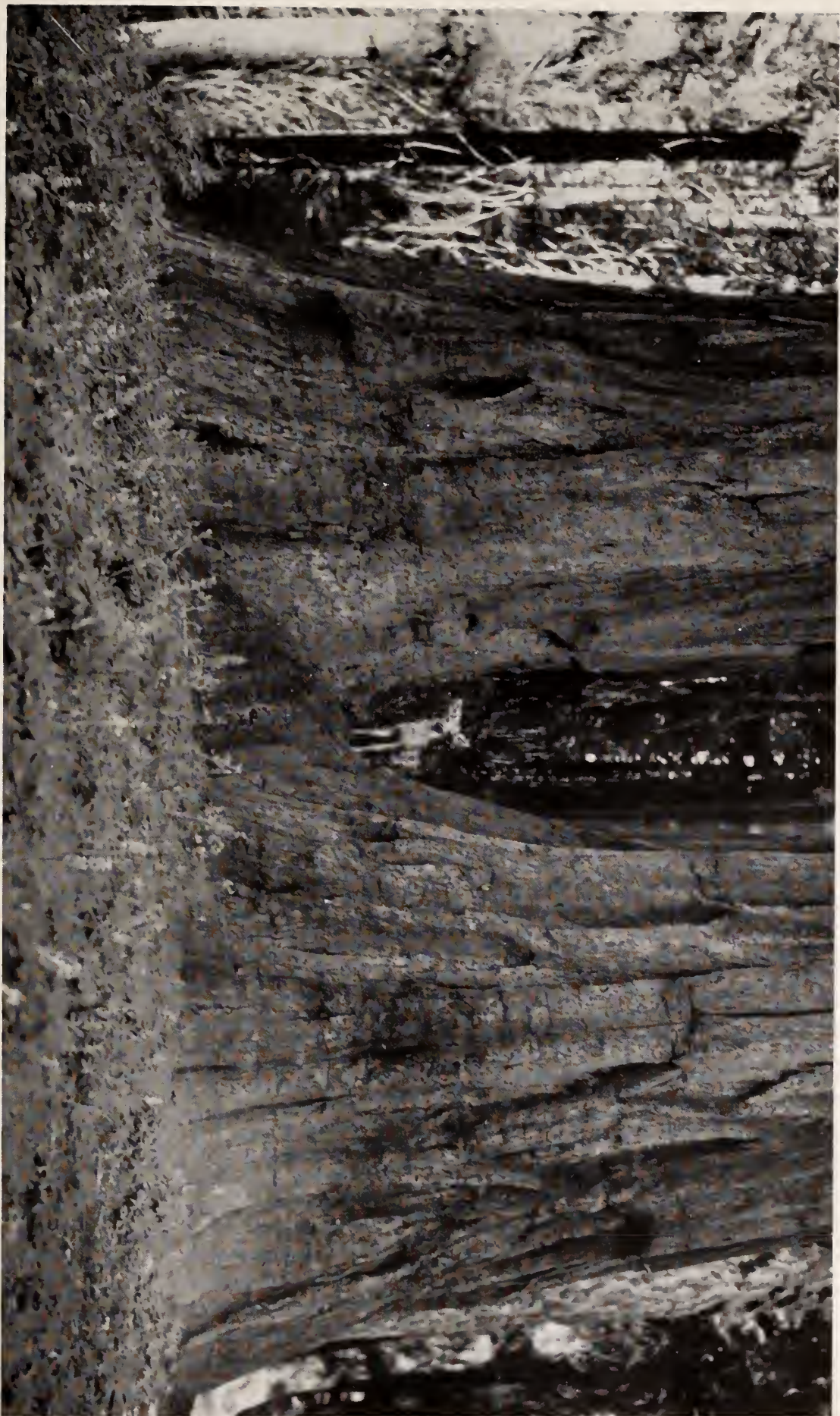
There is little doubt, for instance, that Mount Mitchell, the level upland to the north of it, and all of Sentinel Ridge are remnants, almost untouched by the ice of glacial times, of the late Miocene landscape. Other remnants of this landscape, more or less glaciated, may be identified on the crest of the Monarch Divide. Of these, Granite Basin, indeed all of the elevated upper valley of Granite Creek, is of peculiar interest; for its longitudinal profile, extended forward to the axis of the main chasm (see Fig. 3), would seem to indicate the approximate level of the master stream for that early epoch. The South Fork, it will be seen, then lay in a wide-flaring valley 3600 feet shallower than the present chasm, yet already carved 3000 feet below the summits of the Monarch Divide.

Again, there is reason to believe that the longitudinal profile of

Cloud Cañon (not shown in Fig. 3), duly corrected for glaciation, indicates the level to which the main chasm was cut during Pliocene time. Sugarloaf Valley probably also belongs to the ancient landscape of that epoch. Finally, it is not impossible that the lower valley of Granite Creek affords some indication of the depth of cutting achieved by the South Fork immediately prior to the coming of the glaciers.

Thus, tentatively and by degrees, one may find the way into an analysis of the features of the Kings River region. Possibly some day when that region shall be included in a great national park, as it well deserves to be, a more detailed map of it will become available, and then the foundation will be laid for an intensive and quantitative study such as has been made of the Yosemite Valley. What a wonderful thesis for a future student of geomorphology that would be!





BABY FAWN AND ANCIENT SEQUOIAS IN THE GIANT FOREST  
Photograph by Bayard H. Jones





MOUNT BREWER (13,577 FEET) FROM KEARSARGE PASS  
Photograph by Ansel E. Adams



## KINGS RIVER CAÑON IN 1868

LETTER FROM E. C. WINCHELL\*



[EDITOR'S NOTE: Elisha Cotton Winchell was one of the earliest settlers of Fresno County. He came to Millerton from Sacramento in 1859 and later practiced law in Fresno. His son, Lilbourne A. Winchell, became one of the pioneer explorers of the High Sierra, making the first ascent of Mount Goddard in 1879. Judge Winchell's account of his visit to Kings River Cañon in 1868 is one of the first published descriptions of the cañon. The Whitney Survey party visited it in 1864, but only a brief mention of it is found in the reports. So far as I have been able to ascertain, Winchell's account has not heretofore been reprinted, and for that reason is given here in full. It should be borne in mind that it was written over fifty years ago. Most of the names quoted have given way to others, but it is not difficult to follow the route on the map. A few annotations are added, but otherwise it appears as originally published. The assistance of Mr. L. A. Winchell, the Bancroft Library, and Dr. Charles L. Camp, in discovering and obtaining the newspaper copy, is acknowledged.]

*A Wonder of Creation—Sights in the Heart of the Sierras—"The Wonderful Valley Said to Have Been Discovered by Bierstadt."*

EDITOR MORNING CALL:—My attention has been called to a letter signed "Dred," in *The Call* of September 5th, asking information regarding a "new valley" reported to have been found by the artist, Bierstadt, one hundred miles south of Yosemite, and excelling that cañon in grandeur; as well as to the editor's reply, that the report "lacks confirmation," and that "the existence of such a spot, though possible, is not probable." It was the fortune of the writer to have been one of a party of three who, in the Fall of 1868, visited and sojourned for two days in a stupendous chasm in the region which seems to have been indicated by the Eastern newspapers mentioned by "Dred;" and thinking it likely that not only he, but many others of your readers, may desire to know the truth concerning the "terra incognita" supposed to have been just discovered, I beg to submit to you, in as brief form as may be, a sketch of our explorations in that direction, in the hope that it may aid to turn attention towards a locality which, I think, is destined at no distant day to share with Yosemite the homage of the wonder-seeking world.

I am far from assuming that the cañon which we visited and

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\* Published in the San Francisco *Morning Call* of September 11 and 12, 1872.

which I shall attempt to describe, is the one said to have been visited by Mr. Bierstadt; for many a deep and dreadful abyss lies hidden in that Andean region, only thirty-three leagues southeast of Yosemite, where Mount Whitney, Mount Tyndall, Mount King, Mount Goddard and a score of other clustering peaks, each exceeding 14,000 feet in height, look down on the assembled sources of Kern River, King's River,\* and the South Fork of the mighty San Joaquin; and the great artist, seeking new themes for his pencil, may have entered the portals of some granite gulf where, before, the foot of man never trod. But so far as my information extends, no gorge has yet been found in that part of the Sierra Nevada so extensive and so stupendous as the one to which I have referred.

I beg to correct "Dred's" idea that the "new valley" is at the head of the Fresno River, which is but a small stream rising near the Mariposa, Big Trees, only twelve or fourteen miles south of Yosemite. Its locality is the upper-part of the South Fork of "Rio del Rey,"† or King's River, in the extreme southeastern corner of Fresno County—about sixty miles, as the crow flies, E.S.E. from Millerton, the county seat—about fifty miles N.E. from Visalia, and about ninety-five miles S.S.E. from Yosemite. "Dred" can, if he desires, go by rail from San Francisco to Visalia in one day, thence in one day by carriage, over a good road to Thomas' Saw Mill, forty miles N.N.E. from that town, at an altitude of 5,000 feet, thence in one-and-a-half days, by mules or sure-footed horses and pack-train, thirty miles E.N.E. to the King's River cañon.

During a residence of several years in Fresno County, prior to 1868, the writer learned from a mountaineer, who had frequented the high Sierras, of the existence of an almost inaccessible valley near the head of King's River, said to contain forests of timber, which could be sent down the stream to supply the increasing demand for lumber in the counties of Fresno and Tulare; and also said to contain valuable deposits of copper ore. Inspired by the triple desire of exploring so unfrequented and interesting a district, examining the forests and inspecting the mineral beds, the writer, accompanied by Capt. John N. Appleton, set out on horseback from the vicinity of Millerton, on the 22d day of September, 1868, and proceeded twenty-five miles southeasterly to Bensell's [Bensen's] store

\* The spelling of the original article is retained throughout this reprint. This should be *Kings'* or simply *Kings*.

† *Rio de los Santos Reyes*, is the correct form of the Spanish name.



or trading-post, on Sycamore Creek, two miles north of King's River, where they were joined by their guide, William Haines, and completed their outfit for a twelve days' journey into the heart of the Sierras. Provisions, blankets, camp utensils and extra ammunition were packed on a sumpter mule, which, without leading, followed at their heels like a faithful dog. It appearing that no practicable route lay on the north side of King's River, because of the deep, impassable cañons of the North Fork and Middle Fork, which intervened, it was resolved to cross to the south side and proceed southeasterly for 25 miles to Thomas' Mill, the extreme outpost of civilization, and then turning north of east, traverse the northern flank of the huge mountain-spur which, lying east and west, divides the Kaweah River on the south from King's River on the north. Two days of delay occurred; and after fording the river, we reached Thomas' Mill by a pack trail, at noon, on Saturday, September 26th. The pine forests here are strikingly beautiful, though fast disappearing before the insatiate steam saws that have been devastating them for fifteen years. The wagon-road from Visalia extends a mile or two beyond the Mill, to People's Creek, and to the first grove of big trees to be seen on this trip. Near the trail, on the left, is a hollow log, which the party explored on their return; and two miles on the right is said to be the largest tree yet found in California.

The "Pine Ridge" is a spur running down the north flank of the great "Kaweah Divide," just described, having Mill Creek on its west side, and People's Creek on its east, both flowing into King's River. A parallel but higher spur lies between People's Creek and Haines' Creek; a third, yet loftier, between the latter stream and Glacier Creek; a fourth, higher still, between this torrent and the Crescent Lawn and the final plunge in King's River Cañon.

Across these high spurs, which corrugate the northern face of the Kaweah Divide, our course lay nearly eastward, midway between the crest of the divide high on our right, and the unseen bed of King's River, far down on our left. And from the first Big Trees on People's Creek we had three miles of up-hill travel to the top of the second spur, through trackless thickets and a labyrinth of fallen timber, where only the skill and patience of our guide could have found a way. Then three miles of gentle descent through open woods to Haines' Creek, at the junction of Fern Creek, where, at sundown, we made camp by a strip of coarse grass, called the "Little Meadows,"

eight miles from Thomas' Mill. Bear hunters had been here some weeks before, and had left hideous trophies in the form of several skeletons of black and cinnamon bears. The hundreds of square miles of mountain jungle which clothe these spurs, are the haunts of numbers of these, as well as of the brown and grizzly bear; and the prudent hunter guards his stock of flour and bacon against their thefts at night, by bringing it near the fire, which they dare not approach. Our guide told us of a novice in woodcraft, who came up from Visalia to hunt bears, and who at night put a couple of Chicago sugar-cured hams under his pillow for safe keeping. He slept very soundly, and found, on waking at sunrise, that a brown bear had outwitted him and carried off both the hams.

Our beds were of fragrant, feathery fern, our sleep unmolested. The mountain air grew keen before morning, and the dawn showed us our horses—accustomed to the warm climate of the valley—shivering over the frosty grass and icy pools in the little meadow. Leaving Haines' Creek before 7 o'clock, we at once began to climb a high hill—the third spur—whose top we reached in two hours. The dim trail often disappeared, and boundless thickets, filled with prostrate trunks of trees, made our progress slow and tedious. We were above the usual range of the Indians, and did not see one on the trip. The King's River tribes make occasional visits to the Monos and Owen's [Owens] River Indians, who now and then venture on this side in return; but this trail had not been used for years, apparently, and was often overgrown and obliterated. We at length found the dim tracks of two or three Indian ponies, made a month before, and these furnished a sort of clew to our way. Along Water-Spout Creek, a deluge from the sky had swept bare the solid granite in a strip fifty yards wide and a mile long, carrying away logs, trees, rocks and earth, like chaff, down a deep ravine into the river. Alpine Brook threads a dark forest in a wild glen, and falls into Glacier Creek, which also leaps into the river. Then comes the little stream Los Baños Frios, and Alsip's grove of mammoth trees, which excel in grace and beauty, but do not equal in size, those of Calaveras and Mariposa. We ascended now another steep hill, passing the Druid's Altar, of granite blocks piled by Nature. Descending by gentle undulations, we came into Evergreen Dell, where luxuriant foliage and cooling bowers tempered the blaze of the already fervent sun. At half-past 10, Avalanche Cañon presented a second track of



desolation crossing our path. Shattered crags, mangled logs and trees, hideously mingled with dirt and debris, had plunged in chaotic column headlong down the rugged gorge, leaving a track of naked, slippery granite, one hundred yards wide, over which we got our animals with no little difficulty. In the midst of this frightful track, fast rooted to the firm rock, stood a stately "sequoia gigantea" [gigantea], or mammoth tree, uninjured by the torrent of debris that the storm and the mountain, in their most wrathful mood, had hurled against it. To this we gave the name of "Governor Haight." By the edge of this storm-path is Lamper's Grove, an assemblage of thrifty and graceful young "Big Trees." One of the larger measured sixty-six feet in girth. Continuing upward, we passed the summit of this spur at 11 o'clock, and quickly descended to Glacier Creek, a swift, bright stream, pouring, like all the former ones, down the north front of the Kaweah Divide into the hidden depths of King's River, five or six miles to our left. The steep banks, rough bed and rapid torrent endangered our horses in crossing, and we were obliged to wade and lead them. A mountain to be climbed presented itself at once—the *fourth* spur—and this was a steep, bad ascent, over, *under* and around fallen trunks of trees and through chaparral, requiring an hour's lively scrambling. Then followed a pleasant down-hill ride, through open vistas of superb pines and firs, for half an hour, to Crescent Lawn,\* a spacious meadow encircled on the southeast by a grand arc of granite mountains thinly clad with pines. It was now half an hour past noon. We had been climbing, with no intermission, for six hours, had come nine miles under a warm sun, and were fatigued. We made a fire under the shade of the firs, had hot coffee with our lunch, and reposed for two hours. This spot is seventeen miles from Thomas' Mill.

Our course now abruptly veered to the north and northeast, leading us over the fifth and last spur, and rapidly nearing the profound chasm we were seeking. Thus far, only once or twice had we seen the waters of King's River since fording it. Occasionally, through the leafy lanes of the forests, we could see the northern steep walls of its deep bed, and now and then the yawning gaps in those walls, through which, our guide said, came the North Fork and the Middle Fork. The rich sunlight that bathed the gray adamant seemed to transmute it into gold. We resumed our advance over a gently rising land

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\* This is clearly the meadow now called Horse Corral.

through an extensive tract of forest, which allowed no view of the region ahead, though this was the highest point we attained, being perhaps 12,000 feet up. In an hour the trail wound down the northern slope of a wooded declivity, and brought us, by four o'clock, to a grassy glade with natural wells of water,\* in the heart of a noble forest where our guide halted us for the night, as it was yet, by the trail, five miles to the banks of the King's River, with no grass for our horses intervening. As we came down the slope just mentioned, our attention had been drawn to a remarkable peak of broken granite crags that rose, like a misshapen pyramid, or cone, high out of the forest before us;† and when it was found that our night halt was made within half a mile of its southwestern base, I set out, while my comrades were arranging camp affairs for the night, to climb to the summit before the sun should set. On reaching the apex—a smooth block of granite—I found that it commanded an outlook to the west over all the woods, streams and mountains we had passed, and that the San Joaquin plain would also have been visible but for the strange, misty veil, which, as thousands will remember, ominously hung over California for a month prior to the earthquake of October 20th, of that year. But the view to the north, to the east, to the southeast, and downward, was undimmed, for this peak rose abreast the lower end of the King's River Cañon, and looked down into its awful depths.

I regret that I cannot measure the grandeur of this scene by the features of Yosemite, which I have never visited; but no paintings of that gorge and its surroundings as seen from "Inspiration Point" or "Cloud's [Clouds] Rest," convey to my mind the idea of so sublime a landscape as that which, without warning, burst upon my vision as I looked over the granite block into a deep, dread, silent, stupendous amphitheatre, twenty miles across, crowded with adamant mountains, pinnacled crests, thunder-scarred cliffs, green lines of forests, snows in eternal sleep, horrid gorges and yawning gulfs. Eastward, the sharply serrated contour of the main ridge of the Sierras tore the twilight sky; northward rose the huge, massive barrier that fills the space between the middle fork and south fork; southward, the great, gashed Kaweah Divide bore to heaven its balmy forests; while *more than a vertical mile down*, in the midst of this vast arena, lay a granite trough ten miles long, half a mile wide,

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\* Summit Meadow.

† Lookout Peak.



bordered by perpendicular cliffs rising thousands of feet. A *green mound of forests* hid the floor of the gorge, and a thread-like streak of water faintly gleamed out of it.

Awe-struck, I gazed till the misty veil of the plain drew nearer, and the weird gloom deepened. Silence the most profound brooded over the stony depths. Not a wave of air touched the sprays of the dark green forest which far below me enveloped our camp, nor swayed the straight column of light blue smoke that stole up higher than the trees from the deep-red star of the camp-fire. As the sun set I offered, with due reverence, from this exalted altar-stone the improvised incense of flame and smoke from both barrels of my gun, and before the myriad-echoed thunders had ceased their clamorings over the startled abyss I was descending the peak to rejoin my comrades.

[CONTINUED FROM YESTERDAY'S "CALL."]

Our hunter's repast of mountain quail, flapjacks and coffee, was soon over, and as the shadows fell, our horses, straying at will, were staked among the reeds and grass of the narrow glade. We made couches for the night by spreading our blankets on elastic twigs, trimmed from a fir laid low by Capt. A.'s axe, and carried near to a great log, which was set blazing from end to end. The night was a reign of beauty. No cloud marred the blue nor dimmed its gems. The full moon poured fluid silver through the sombre vistas, and tipped the giant pines with a splendid radiance—a frosted fire. Close about us lay compacted shadows, fitfully lighted by the wavering flames that anon leaped up and fell back again. Dark volumes of smoke rolled to the tree-tops, swarming with armies of golden sparks, which darted and glided hither and thither, crossing and recrossing, weaving and mingling their serpentine threads of fire, till they seemed to be myriads of twining snakes climbing up the smoky pillars to reach the stars. Standing around us like solemn genii the towering firs looked regally down. Their stately shafts were plumed with tapering cones of foliage, of so rare a grace, so exquisite a symmetry, as to command our unceasing admiration even in the prosaic glare of day; but the witchery of Night invested them with an unspeakable glory, and seemed to lift their lance-like points against the very dome of Heaven. As the firelight rose and gleamed, their forms were gilded and glowing; as it died flickering away, their sombrous shapes stood in sharp relief against the starry sky, while the frisky and

irreverent sparks ever danced fantastically among their moveless branches.

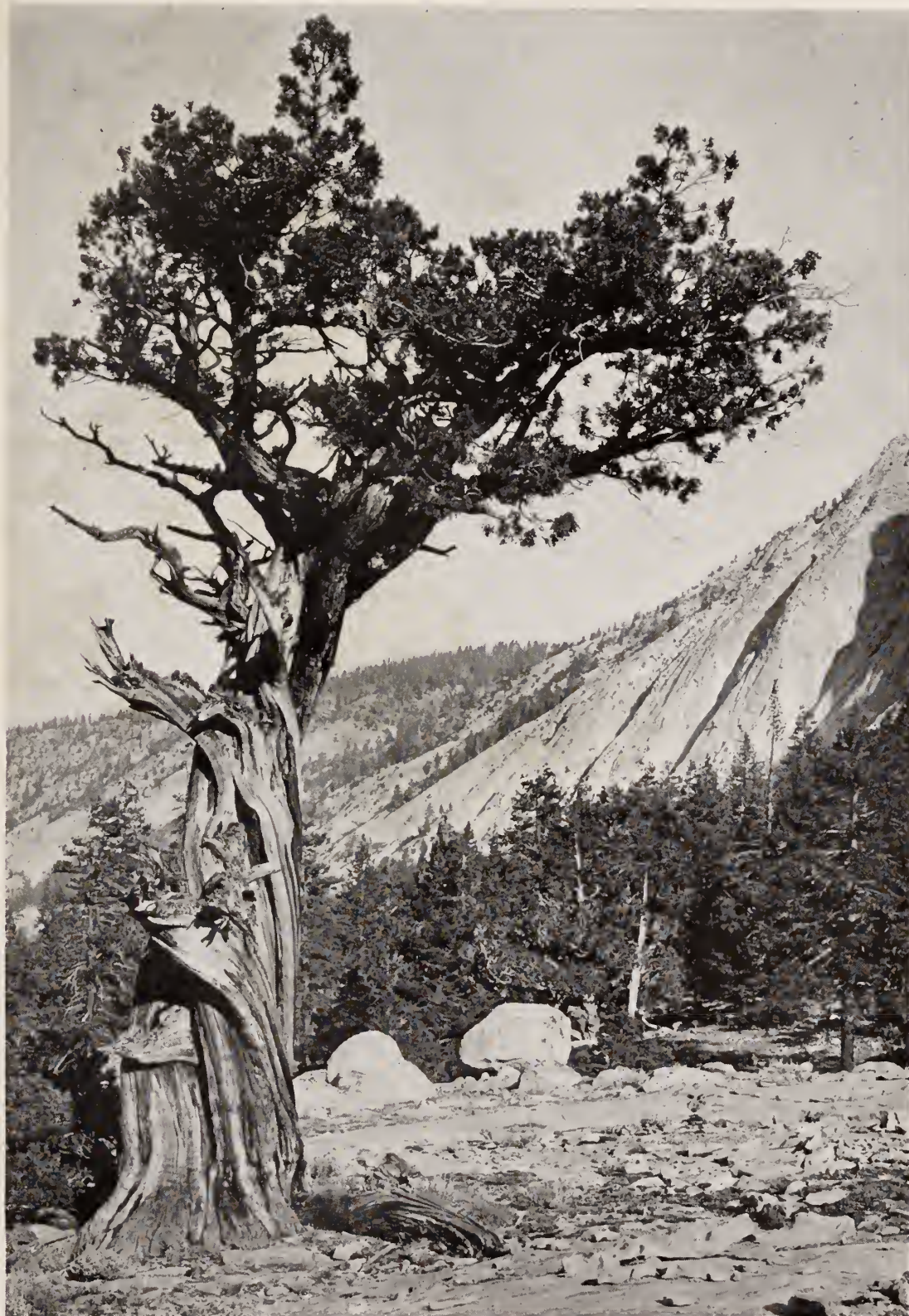
At midnight there was a frosty keenness in the air, and the great log was burning low. We arose and heaped other logs and limbs upon the fire, which kept us warm till morning. Capt. A. desired to visit the top of the rocky pyramid before sunrise. Rousing early, we took a cup of hot coffee at dawn, and set off at five o'clock, through the frosty, spicy air to climb up 600 or 800 feet, and then down again, before breakfast. We reached the granite cap before the sun came over the Sierras. As the mists were dispelled, and the cold gray of the mighty chain melted into purple and gold, we beheld, in a direction south of east, and twenty-five miles distant, the forms of Mount Brewer, Mount Williamson and Mount Tyndall, with a more distant peak, supposed to be Mount Whitney.\*

The eastern face of the peak where we stood was a sheer precipice for hundreds of feet, ending in a craggy pile of debris that sloped to a forest-clad ravine, where wound the trail we afterwards descended. The northern front dropped yet lower, to a steep incline of smooth rocks, slanting away for a thousand feet to a plunging gorge, which fell thousands of feet further to the floor of the cañon, where the tall pines seemed but shrubs. For three-fourths of a great circle about us, the view was unbounded, save by the mountain ramparts; and within those limits were embraced, in infinite variety, all shapes and forms of lofty height and unfathomed depth that cold and sullen stone can assume. Lordly and lonely obelisks rose along the Sierras' crest; majestic domes here and there rested on wide exposures of granite; broad, mural tablets, gleaming like marble in the sunlight, lifted out of gloomy cañons; while there were hosts of beetling crags and buffeted cliffs that only scowled, even in the brightest hours. The largest areas exhibited only nude, primeval granite—cold, soulless and silent as death. Immortal snows lay cradled among the higher summits; and up the wide clefts, between the multitudinous spurs and ridges, were boldly thrust long, narrow columns of green forests, that dwindled to thin, spear-like points in the stern presence of undying frost. The central object of interest was the adamantyne trough below us; so deep, its broad floor seemed but a few yards wide—its kingly forests a blended mass of shrubs—its river a contemptible rill. So high was this dominating peak, that, though half

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\* The last three are not visible from this point.

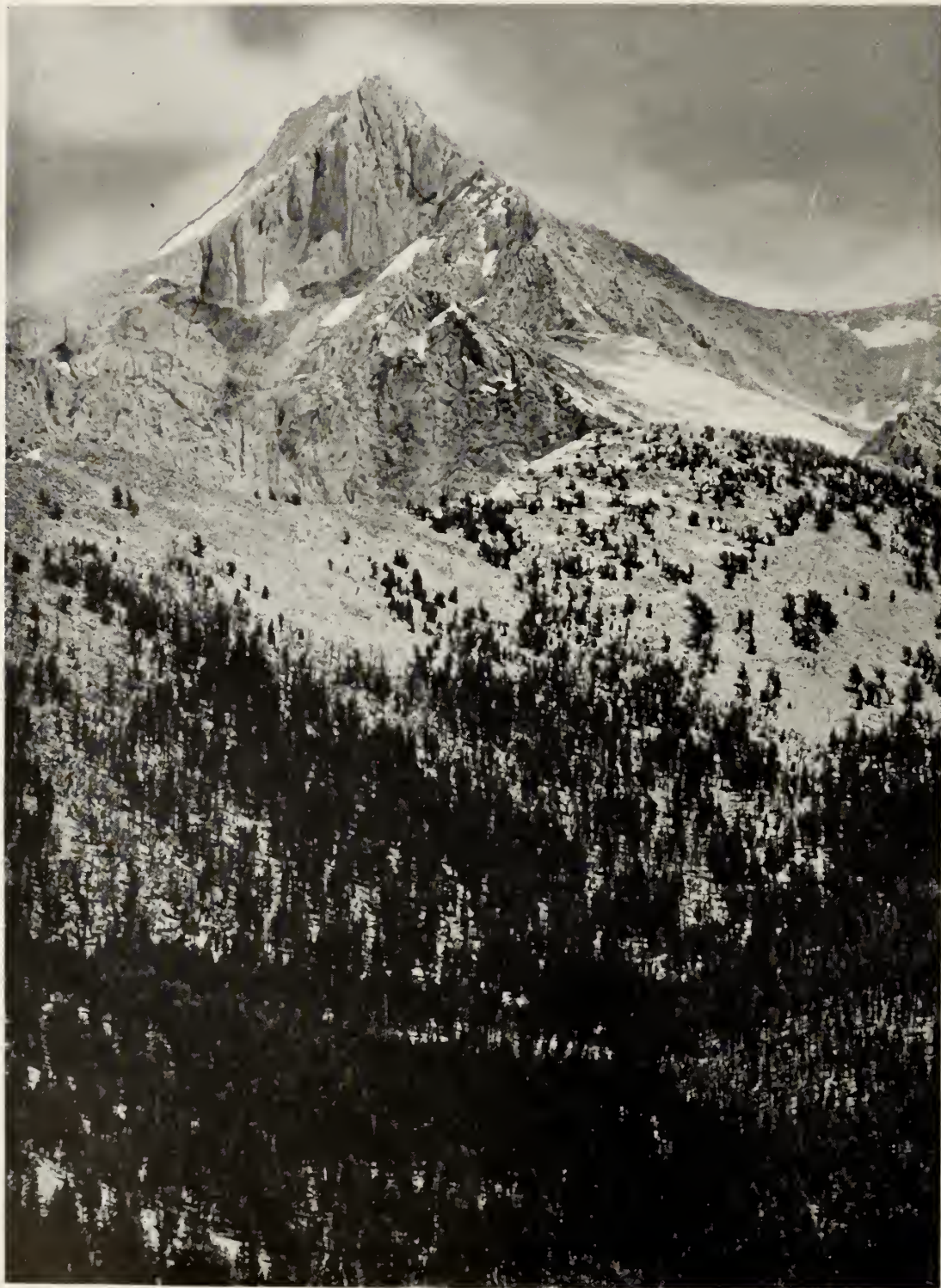




SIERRA JUNIPER IN WOODS CREEK CAÑON

Photograph by Ansel E. Adams





MOUNT KING (12,909 FEET)

Photograph by Ansel E. Adams



a mile back from the stream, it seemed possible to toss from here a pebble into the water.

The pyramid was now to be christened. A wicker-woven flask was produced, (its contents being tested to avoid possibility of mistake), and a generous libation poured therefrom upon the crowning block, while simultaneously was pronounced, in honor of Alexander Winchell, LL.D., State Geologist of Michigan, the name, "Winchell's Peak."\*

Thus we followed the distinguished example set us by other explorers.† Formal salutations were addressed to the witnessing mountains, and double charges of gun-powder fired over the cañon and forest, arousing crashing reverberations that leaped from cliff to distant cliff, swiftly redoubling on the morning air, till

"Every mountain now had found a tongue;  
And Jura answered from her misty shroud,  
Back to the joyous Alps that called to her aloud."

Rising, as it does, by the side of the only trail that can ever enter the King's River Cañon, this peak will doubtless be ascended by all tourists who desire to comprehend in a single glance a general view of the great gorge and its overlooking heights. Here is a subject for the skill of painters and photographers for all time; and it should be no marvel if, within a few years, the pencils of Bierstadt and Hill, or the cameras of Watkins and his brethren, shall have made this panoramic scene as familiar to the habitués of Montgomery street, as are now the views from "Inspiration Point."

A shout from our guide gave warning that breakfast awaited us in the pillared saloon of the forest and we zigzagged down the steep without delay. A genial sun was driving away the frost, and a bright day impended. With keen zest breakfast was dispatched. Our horses were quickly brought in and we eagerly prepared for a descent into the cañon, a serpentine dive of four or five miles. By eight o'clock we were filing past the southern base of the pyramid, and soon approached the head of a broad but steep ravine, filled with pines, down which, in a northeast course, we took our sinuous way. There was no little variety in our mode of progress. We rode, we walked, we slid, we scrambled; we made sharp angles to the right and left, ever plunging downward, downward—now, in a faint trail, now,

\* Alexander Winchell was a cousin of E. C. Winchell. Unaware of this earlier use, L. A. Winchell afterwards gave the name to a peak of the Palisades, where it still rests.

† Presumably referring to the Whitney Survey.

with no mark to guide us. Fortunately, the declivity was clothed with a soil of crumbled granite and fine straw, which lessened the toil and risk of descent. Crystal Creek rushed hither and thither athwart our course, and leaped in white cascades down many a cliff. The last crossing, under the "Devil's Cataract," was attended with some hazard. Thenceforward, no obstacle presented. At half-past 10 o'clock we rode out upon the sloping floor of the great gorge, having consumed two-and-a-half hours in coming down from the base of "Winchell's Peak," which now stood at a dizzy height above us. Half a mile over a gentle glacis through a forest of pines in open order, led us to the long sought river—the peerless South Fork—the very emblem of saintly purity, on whose brink we halted. Headquarters were established near a fallen tree; saddles were stripped off, the patient mules unladen, the animals loosed to roll and revel in the green, luxuriant grass; and when a fire had been kindled and the camp set in order, we instinctively sought the verge of the arrowy stream, and laved luxuriously in the wondrous beauty of its transparent billows. So incomparably charming a stream I never saw, though the Merced of Yosemite may rival it. Its thrice-polished sheen, its triple fineness, its infinitely lucent body, hindering no pencil of sunlight from irradiating its pebbly depths, its noiseless flight down smooth inclines, its purling voices where rocky ledges jarred its self-control, its utter peace and repose where shadows veiled its pools, and its delicate, ever-varying tints made it the object of our unceasing admiration.

In this primeval paradise, all day long we lingered mingling our sordid speculations in regard to the practicability of floating rafts of saw-logs down the river to the San Joaquin plain, with our feelings of wonder at the scenes around us. With our guns and fishing-tackle we rambled through the woods and by the stream in search of mountain grouse and mountain trout. Two miles below we found that the valley, which was three-quarters of a mile wide at the camp, contracted to a V-shaped cañon, only wide enough for the egress of the narrow river. No perpendicular cliffs border this western section, though the walls rise at a steep angle. Looking up the valley, we could see great cliffs that drew near each other, from opposite sides; but having no way of measuring altitudes, we could only guess at the elevations. Early the next morning, we pursued our way up the valley, on the south side of the river, which we crossed at a deep,



swift ford, two miles above our camp. The cañon grew narrower—its sides more precipitous. A mile above the ford we passed the mouth of “Kettle Brook,” which leaps into the gorge from the southeast, down a slope of 45 degrees, through an impassable ravine.\* From here, onward, there was an unending succession of naked, perpendicular battlements, of various heights and forms, severed by breaks and gorges, out of which rushed foaming torrents. We were lost in amazement. There was a resistless fascination in those mural heights which impelled us to gaze fixedly at each new form, till it had passed and its successor rose to receive the like homage. We made many attempts to estimate the altitudes; but there were no data to guide us, and all our calculations failed. We believed the walls to reach thousands of feet above the valley, but whether 3,000 or 6,000, I have never dared to say. Opposite Kettle Brook are the “Pillars of Hercules,” towering at the portals of the stony realm beyond; and next, on the same side, is “Appleton’s Peak”—a sheer, blank wall, near whose top the great pines that plume it seem but a span long. “Leach’s Peak,” on the south side, fills the angle made by the Brook. The cañon here is but one-fourth of a mile wide, but rapidly widens again and contracts in elliptic form, making a rude oval, half a mile wide, and thrice as long, named “The Coliseum.” Its lofty, fringing cliffs are yet nameless. At the eastern end a furious torrent darts out of a steep gully on the north side, with deafening roar, and gave us trouble in crossing, for which we repaid it with the title, “Thunder Creek.” Further on is a second, irregular ellipse, a mile long, its northern wall a broad, angular peak, the “Pyramid of Cheops.” On the south “Three Sisters” correspond in form to the “Three Brothers” of Yosemite. Another stream emerges from a glen east of the Pyramid, to which, because of its proximity to the copper mine alluded to in the early part of this sketch, we applied the name “Malachite Creek.” The deposit of ore crops out 400 feet above the valley on the east side of this rivulet, and appears to be of rich quality. A third swell in the cañon seemed so nearly circular, being only three-quarters of a mile long and of almost equal width, that we called it “The Rotunda.” Its enclosing heights are yet unchristened. Finally, beyond, is the noblest apartment of the series. The great cañon of King’s River is here abruptly terminated by a magnificent granite tablet which stands across the valley and faces the west. Two

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\* Roaring River.

similar tablets uplift from the green floor, at right angles with the former, on opposite sides of the river, thus constituting the three inner walls of a vast Titanic temple, open to the setting sun. But through the enclosed, inner corners leap into this enchanted, and enchanting arena, two bold and glassy torrents from the north and the south—new-born of the snows—which, rushing together, instantaneously coalesce, forming the jubilant South Fork, and sweep in matchless beauty and wedded gladness down through the embowered and rock-walled valley.

Here ended our advance; and here, at 11 o'clock A.M. of Tuesday, September 29th, we drew rein, and alighted in a delightful spot, where graceful pines and cottonwoods shadowed the green sward and the awful trio of cliffs seemed to bend over our heads. Words avail not to picture a scene like this. The Yosemite towers may, or may not, exceed these in height; it is immaterial. I cannot divest myself of the belief that no spot has yet been found on American soil where so much of grandeur concentrates in so small a space. The insatiate eye seeks again and again that trio of templed cliffs, and never tires of their supernal majesty. They seem to form Nature's own chosen cathedral, where deep organ-tones from sounding streams ever repeat the anthems taught by Deity.

Most reluctantly, as the sun stooped low, we turned our horses' heads homeward. At dark we slept by the "Pillars of Hercules," and the roar of "Kettle Brook" was our tremendous lullaby. Early the next day we crossed to the south side and hasted down the valley. Our leave of absence had expired, and ominous fleeces floated in the sky, which in a night might bury in snow our dim and difficult path. The ascent out of the cañon was made in less than three hours, and our camp that night was at Alpine Creek, fifteen miles from the "Pillars of Hercules." Our noon halt the next day was in the Big Tree Grove, two miles from Thomas' Mill. Our whole party took occasion to ride, in single file, fully armed and sitting erect on their horses, into the hollow log (before alluded to) for seventy-two feet, finding six feet of space overhead, and ample room at the terminus to wheel and ride out again. The faithful mule, as in duty bound, though heavily laden, voluntarily went through the same programme to the letter.

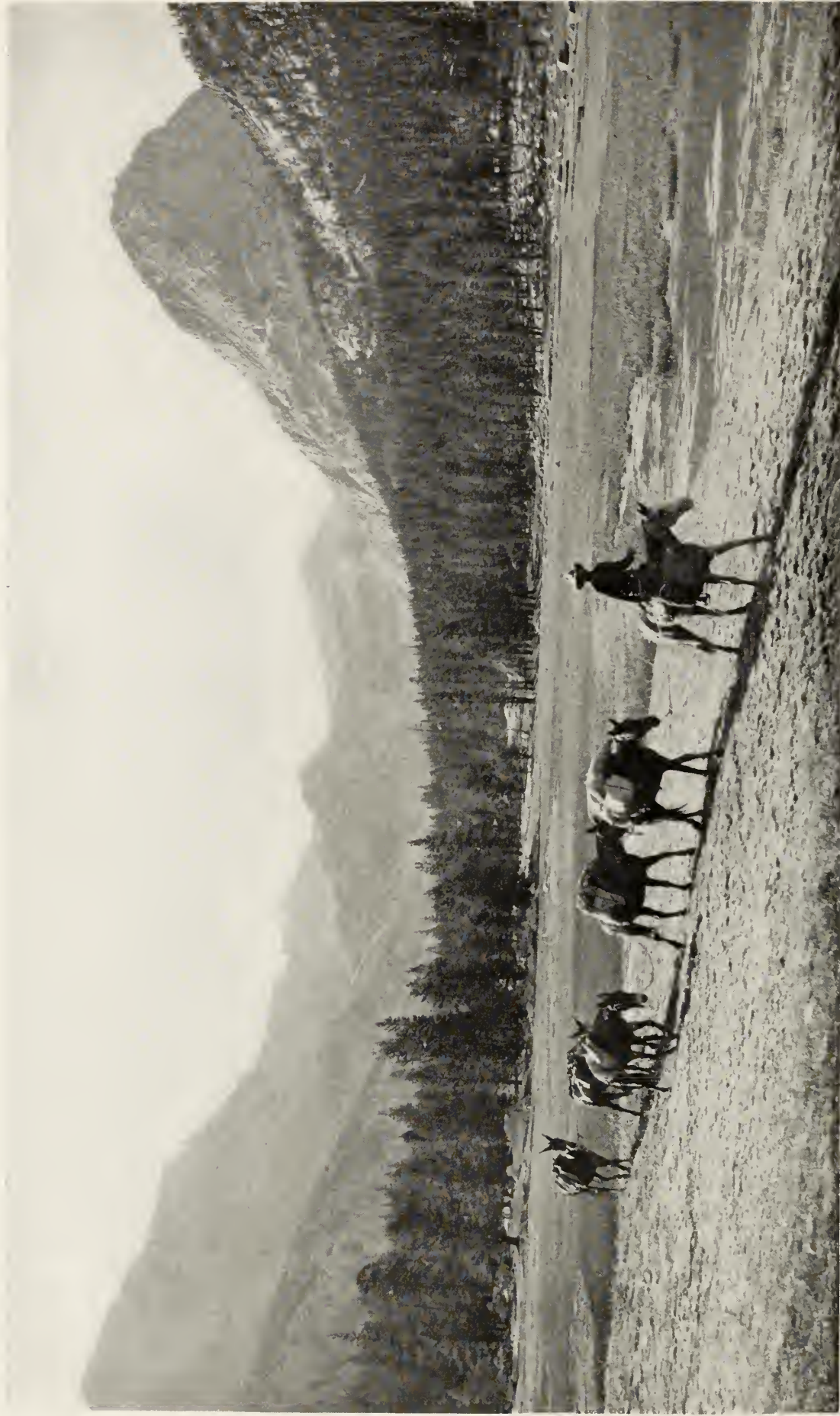
On the third day after our journey was ended. We had been two weeks making the round trip, which, though a fatiguing one, has





LOOKING NORTHEAST FROM MUIR PASS—SHOWING MOUNT POWELL.  
Photograph by J. Gordon Chelew





AN EARLY-MORNING DEPARTURE—COLBY MEADOW

Photograph by Philip S. Carlton



always been a source of delightful recollections. If "Dred" should resolve to undertake the journey, now is the golden hour of the year, when all the streams are at their lowest. If the trail from Thomas' Mill has been cleared since 1868, which is not unlikely, he could go thence to the valley in a single day, or in three days from San Francisco! He will miss the Yosemite Fall, the Vernal Fall, and the Bridal Veil, and may find no vertical cliffs so high as El Capitan; yet I feel it safe to predict that he will find, in other features of the King's River Cañon and of the encircling mountains, a most ample reward for all his toils and hardships.—E. C. W.

*San Francisco, September 11, 1872.*

## FIRST ASCENT OF MOUNT POWELL

BY WALTER L. HUBER



ON August 1, 1925, when the entire Sierra Club outing party was making the march from the Kings River basin over Muir Pass to Colby Meadow on Evolution Creek, James Rennie and I took advantage of the nearness of the route to explore an area but little frequented, the region about Mount Powell. The regular march, as planned, was to be a long one, and since we were adding an excursion of unknown length and difficulty, we were near the head of the breakfast line and soon on the trail.

Our objective lay directly northwest and above the camp-site at no great distance. The steep wall along the north rim of Le Conte Cañon does not afford an inviting start for a long climb; but a more promising route appeared, from the map, to be available by following the John Muir Trail for some distance westerly toward Muir Pass, and then turning abruptly back to the northeast, after gaining considerable elevation, at a point where an easier exit from the cañon seemed likely. We followed this course, departing from the main trail on a bench below Lake Helen.

Through all of this early morning ramble, Mount Powell did not come into view until we had climbed an intervening ridge, and had attained an elevation of more than 12,000 feet. From this ridge, the summit, consisting of some very interesting overhanging rocks, is plainly visible. At first glance, the route to the summit appeared more difficult than it later proved to be, so we had some discussion before choosing our course. Several chimneys afforded certain routes to the ridge along the skyline, but our fear was that this ridge would prove to be a knife-edge, with the east side as steep as the west side, which we were viewing.

A drop of several hundred feet into a cirque, a scramble over immense blocks of granite to smaller ones, followed by a climb up a chimney, which we had selected from our last vantage-point, brought us to the skyline we had studied, and to a pleasant surprise. Instead of a knife-edge, we were on the margin of a high barren plateau sloping gently eastward. The climb to the summit (elevation, 13,361



feet) from this point was not difficult, although one which incites a little caution, since the very summit is an overhanging rock of enormous size. A careless step might result in a drop to the glacial ice far below under the north face. This glacier may be considered the actual head of the Middle Fork of Bishop Creek, although from Lake Sabrina Mount Haeckel and its snow-fields are more in evidence.

A second summit, about three-eighths of a mile to the northeast, appeared higher, so, without tarrying, we hastened to it, only to be convinced that our first summit was, after all, really the higher. We left no evidence of our ascent on the northeast peak, but upon our return placed a small cairn on the overhanging rock and in it a metal tag bearing the emblem of the American Society of Civil Engineers with our names and the date scratched upon it, an emblem similar to one which I had placed upon the summit of Mount Haeckel five years before.\* We found no evidence of previous ascents on either peak of Mount Powell.

Since our base camp was being moved to Colby Meadow, over in the basin of San Joaquin River below Evolution Lake, we did not feel warranted in stopping long to enjoy the outlook from the summit. The view of the Palisades is a splendid one, but a storm which was closing down rapidly obliterated it. This same storm did more than hide a marvelous view; it gave us a drenching which, even after several months, seems very real. Not only did this continue during the descent, but long after we reached the John Muir Trail and had taken up the march over Muir Pass to camp and a belated supper.

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\* SIERRA CLUB BULLETIN, 1921, XI:2, pp. 144-146.

## MOUNT SHASTA

BY ANSEL F. HALL, CHIEF NATURALIST, U. S. NATIONAL PARK SERVICE



IT is a friendly mountain, this great California snow-peak called Shasta. Far from forbidding in its splendid fourteen-thousand-foot isolation, it offers every attraction to the mountaineer—snow, ice, and rock-climbing in an ideal combination; a panorama from the summit as extensive and varied as any in the West; and, best of all perhaps, a large proportion of fair sunny days during the summer. Thousands there are who refer to the mountain in loving terms; but if all of its remarkable features were listed, the most surprising would probably be its lack of really intimate acquaintances. There it stands, its summit less than ten miles from a main artery of travel, yet its invitation to turn aside and breathe for a day the balsam-scented air of its heights is all but unheeded. Since the completion, in 1887, of the Southern Pacific railroad line from California to Oregon, commonly known as the Shasta Route, the form of the mountain has become familiar to travelers. According to estimates made by the railroad company, *nine and a half million persons* have crossed its lower slopes, admiring its magnificence from the car-windows.

It seems strange that a mountain whose summit dominates the landscape for a hundred miles, and is visible for almost twice that distance, should have remained unknown until less than a century ago. Mounts Rainier, Hood, St. Helens, Baker, Saint Elias, Popocatepetl—in fact, practically all the other great mountain masses of the Pacific Coast—had been named and mapped before the beginning of the eighteenth century.

A Spanish manuscript in the Bancroft Library, the diary of Fray Narciso Duran, written during the exploratory trip up the Sacramento River in May, 1817, indicates that the Spaniards were the first white men to see Mount Shasta.\* Writing on May 20, 1817, Fray Duran says: "At about ten leagues to the northwest of this place we saw the very high hill called by soldiers that went near its

\* *Expedition on the Sacramento and San Joaquin Rivers in 1817; Diary of Fray Narciso Duran*, edited by Charles Edward Chapman, *Publications of the Academy of Pacific Coast History*, December, 1911, vol. 2, no. 5, p. 15.





MOUNT SHASTA FROM THE SOUTHWEST

Photograph by H. S. Lawton (from Southern Pacific Company)

Coast Survey Report 1876.

Signal erected  
Summit of Mt. Shasta  
Siskiyou County  
Cal.  
14 400 feet above the  
Sea level  
by  
A. F. Rodgers, Assist. C. S.  
in October  
1875.

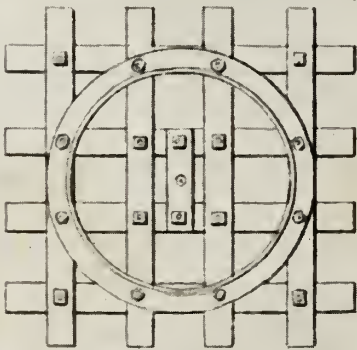
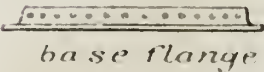
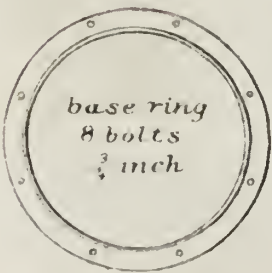
Galvanized iron shaft with  
brass base Shaft set in bed  
of cement two feet below  
surface and filled with broken  
rock and rubble.

Reflecting  
Conoid 3 feet  
high of copper &  
nickel plated.

Diameter of  
body  $2\frac{1}{2}$  ft.

Iron plates  
No. 14

Extreme  
height, bed.  
plate to apex,  
 $14\frac{3}{4}$  feet



10 11 12 13 14 15 feet

DIAGRAM OF MONUMENT ERECTED ON MOUNT SHASTA IN 1875  
(Destroyed by lightning in 1905)



slope Jesús María. It is entirely covered with snow. They say that a great river of the same name runs near it, and that it enters the Sacramento River, and they conjecture that it may be some branch of the Columbia. This I have heard from some soldier; let the truth be what it may. Today we went four leagues up the river toward the north and northwest."

The effective discovery of Mount Shasta was on February 14, 1827, when it was seen by Peter Skene Ogden on his way south from the Hudson's Bay Company post at Fort Vancouver on the Columbia River. In his journal under that date he says, "There is a mountain equal in height to Mount Hood or Vancouver, I have named it Mt. Sastise."\*

The origin and meaning of the name are not entirely certain, although it is undoubtedly of Indian derivation. The tribal name of the Indians of the Mount Shasta region was Shas-ti'ka, according to Stephen Powers, and their name for snowy mountain, and for Shasta in particular, was Wai-ri'ka, or, more correctly, Wai-i'ka.† In Hodge's "Handbook of the American Indian" it is stated that *Shasta* may be derived from *Sus-ti'ka*, the name of a well-known Indian living near Yreka about 1840. Alleged origins from the Russian, or from the French word *chaste* (pure), are now generally discredited.

Mount Shasta was seen by Lieutenant Emmons of the Wilkes Exploring Expedition on October 3, 1841, and in Commander Wilkes' report and on the accompanying maps it appears as *Mount Shaste*.‡ Five years later it was seen by Frémont on his third expedition, and designated *Shastl* in his report and *Tsashtl* on his map of 1848.§ Lieutenant Robert S. Williamson, United States Topographical Engineers, was in charge of surveying parties in search of a railroad route from the Columbia River to the Sacramento Valley in 1851 and in 1855. In the reports of his expeditions the mountain is referred to as *Shasta Butte*, a name which had wide usage in the early days.||

\* *The Peter Skene Ogden Journals*, edited by T. C. Elliott, in *Oregon Historical Society Quarterly*, June 1910, vol. XI, no. 2, p. 214.

† *Tribes of California*, by Stephen Powers, in *Contributions to North American Ethnology* (Powell Survey), vol. III, 1877, p. 243.

‡ *Narrative of the United States Exploring Expedition, During the Years 1838, 1839, 1840, 1841, 1842*, by Charles Wilkes, U.S.N., 1845, vol. V, pp. 156-157.

§ *Geographical Memoir upon Upper California in Illustration of his Map of Oregon and California*, by John Charles Frémont, Washington, 1848, pp. 24-25.

|| *Pacific Railroad Reports*, vol. VI, 1855, part I, pp. 36, 127.

The first ascent of Mount Shasta appears to have been made by a Captain Pearce (or Pierce) in 1854. In a history of Siskiyou County, published in 1881, there is a circumstantial account of the ascent. Here the name is given as J. D. Pierce and the date as September, 1854. Pierce made a solitary ascent first, and shortly afterward led a party of thirteen prominent citizens of Yreka, Humbug, and Scott valleys to the summit. These men erected a cairn at the summit and there deposited copies of the *Mountain Herald*, the *New York Herald*, the New Testament, and the constitutions of the Sons of Temperance and of the Odd Fellows. They measured the temperature of the hot spring near the top and found it to be 180° Fahrenheit.\* A variation of this account appears in *Ballou's Monthly Magazine*, Boston, October, 1868, in which it is stated that Captain E. D. Pierce, of Yreka, made the first ascent in August, 1854.† In Hutchings' "Scenes of Wonder and Curiosity in California" (1860) there is a reference to an ascent by Captain Prince in 1852; and in the *Sacramento Union* of April 5, 1865, it is stated that Captain Purce made the first ascent, and that the captain was a member of the State Legislature from Shasta County in 1852. The reference to the Legislature would seem to make it possible to settle the matter of the spelling of the captain's name, but an examination of Davis' "History of Political Conventions in California, 1849 to 1892" only adds a fourth variation, for E. D. Pearce is listed as a member of the Assembly from Shasta County in 1852. From these references it appears most likely that the name was pronounced as "purse," and that the spelling was a matter of small concern both to the captain and to those who knew him. "Prince" is obviously a misprint, and the date of 1852, given by Hutchings, is probably an error. At all events, the identity of the man seems pretty well established, and it is also clear that he was generally credited in his day with the first ascent of Mount Shasta.

An ascent of Mount Shasta, alone, by Israel S. Diehl, of Yreka, on October 11, 1855, was regarded by Hutchings as a pioneering feat of the first order, and a detailed account of Diehl's experiences during his three days on the mountain is quoted in "Scenes of Wonder and Curiosity in California." An even more remarkable ascent was made in April, 1856, by Anton Roman, whose hardships may

\* *History of Siskiyou County, California*, [by Harry L. Wells], Oakland, 1881, p. 32.

† *The First Ascent of Mount Shasta*, by Allen H. Bent, in *Mazama*, December, 1920, vol. VI, no. 1, p. 54.



be inferred from the fact that the thermometer which he carried to the summit registered twelve degrees below zero when it slipped from his numb fingers and was broken.\* Roman, a native of Germany, came to California in 1849 in search of gold, but spent most of his time up to 1857 traveling among the mining-camps selling books. About 1859 he opened a book-shop in San Francisco, where Starr King, Mark Twain, Charles Warren Stoddard, Bret Harte, and other famous authors were accustomed to gather. When, in 1868, he began the publication of the *Overland Monthly*, Bret Harte became the editor.

Joaquin Miller tells, in "Life among the Modocs," of his last ascent of Shasta, which seems to have occurred about 1858, when he was a lad of sixteen years. To him the circumstances were far from pleasing. Acting as guide for two missionaries, he had considerable difficulty in getting them to the top. Once there, they scattered some of their tracts and, indifferent to the view, immediately started down. Miller's services were paid for in printed sermons and prayers, and we can scarcely wonder at the pen-lashing which the young author bestowed upon the missionaries and their tracts.

In the summer of 1859 N. C. Mayhew and two companions spent the night at the summit of Shasta, bivouacking at the hot spring just below the topmost crest,† a feat which was later duplicated by both John Muir and Clarence King and supplied exciting adventures for their interesting narratives.

In September, 1862, Josiah Dwight Whitney, recently appointed State Geologist of California, with William H. Brewer, his principal assistant, and Chester Averill, made the first scientific expedition to the summit. In telling the story many years later, Brewer commented on the difficulty of securing reliable information in advance of the trip. "Shasta was then supposed to be the highest point in America," he said. "I collected all the information I could for two years regarding it. Many told us that it could not be ascended; others told us that it was perfectly easy; one man said that grass grew nearly to the top, yet the fact that its snows are seen at the distance of one hundred and fifty miles made me doubt his word. But when we got up we found no great difficulties, no crevasses, no fearful precipices, only an exceedingly hard climb. The slope we took for

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\* *Ascent of Mount Shasta*, by Benjamin P. Avery, in *Overland Monthly*, May, 1874.

† *History of Siskiyou County*, [by Harry L. Wells], Oakland, 1881, p. 32.

eight thousand or more feet was at an angle of twenty-five or thirty degrees, and an hour's climbing did not make much headway; but when we got to the top we found people had been there before us. There was a liberal distribution of 'California conglomerate,' a mixture of tin cans and broken bottles, a newspaper, a Methodist hymn-book, a pack of cards, an empty bottle, and various other evidences of a bygone civilization."\*

The Whitney party lacked the time and the equipment to make a thorough survey of the mountain, but they did set at rest many of the erroneous impressions about it that had until then been current. By observing the barometric pressure at the summit and comparing it with readings lower down, they computed the altitude at approximately 14,440 feet above the sea.† This figure was used for many years, even after more accurate observations had been made, and was frequently dressed up as 14,444 for publicity purposes.

An account of this ascent, sent by Brewer to Professor Brush at Yale University, came to the attention of Clarence King, recently graduated from that university, and so interested him that he soon afterward set out for California.‡ Volunteering as an assistant in the California State Geological Survey, he began the career which carried him rapidly to leadership in the geological surveys of the country. King originated the Survey of the Fortieth Parallel and later became the first chief of the United States Geological Survey. While engaged in the former survey, in 1870, he explored Mount Shasta and, with Samuel F. Emmons, Frederick A. Clark, and Albert B. Clark, spent a night at the hot spring near the summit.§

Five years later the United States Coast Survey began a series of observations from Mount Shasta. Captain A. F. Rodgers was in charge of the work, and was fortunate in enlisting the services of John Muir, who had already, in the fall of 1874, spent some time on the mountain. On April 30, 1875, Muir and his companion, Jerome Fay, while engaged in making observations for Captain Rodgers, were caught in a blizzard and forced to lie for thirteen terrible hours

\* Remarks of Professor Brewer, in *Appalachia*, December, 1886, vol. IV, no. 4, p. 368.

† *Geology*, vol. I, Geological Survey of California (J. D. Whitney, State Geologist), 1865, pp. 332-349.

‡ *Clarence King Memoirs*, published by The Century Association, New York, 1904, pp. 313-315.—*Transactions of the American Institute of Mining Engineers*, for 1902, vol. XXXIII, p. 624.

§ *Active Glaciers within the United States*, by Clarence King, in *Atlantic Monthly*, March, 1871.—*Shasta*, by Clarence King, in *Atlantic Monthly*, December, 1871.—*Mountaineering in the Sierra Nevada*, by Clarence King, 1872, pp. 230-235.



in the hot springs, being scalded on one side and nearly freezing on the other.\*

In October of the same year Captain Rodgers succeeded in erecting upon the highest point of the summit a cylindrical steel monument topped by a nickel conoid reflector, in all some fourteen feet high.† It was hoped by this means to establish lines of survey from the summit of Shasta to other points at unusual distances. The feat of carrying the thirty-five hundred pounds of metal from Strawberry Valley to the top of the mountain was accomplished in four days by a large pack-train, which succeeded in reaching the eleven-thousand-foot level, and by a number of Indian porters, who bore the burdens up the remaining thirty-five hundred feet. Although it suffered considerably from tarnish, the monument stood for twenty years, until a stroke of lightning destroyed it in 1905 and cast its wreckage over the great precipice to the east.‡ Who knows how many generations will pass before this strange and mysterious instrument will emerge at the foot of Wintun Glacier, and what conjecture it will occasion?

One of the most remarkable events in the history of the mountain was the experience of B. A. Colonna, of the Coast and Geodetic Survey, who spent nine successive days and nights on the summit in July and August, 1878.§ Under direction of Professor George Davidson, it was determined to attempt to flash signals between Mount Shasta and Mount St. Helena, 192 miles to the southward. To Colonna was assigned the duty of occupying Mount Shasta. Indian porters carried the instruments from timber-line to the summit camp at the hot springs. Colonna was much impressed with the lack of interest displayed by the Indians in ascending the final two hundred feet at the highest point, not one of the twenty availing himself of the opportunity. After his porters had departed, Colonna remained with two assistants, one of whom was forced by illness to go down the following morning. The heliograph was set up, but the smoke from forest fires continued day after day to make signaling

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\* *Snow-Storm on Mount Shasta*, by John Muir, in *Harper's New Monthly Magazine*, September, 1877.—*Steep Trails*, by John Muir, 1918, pp. 67-81.—*The Life and Letters of John Muir*, by William Frederic Badè, 1924, vol. II, pp. 31-41, 49-51.

† *Report of the Superintendent of the U. S. Coast Survey for 1876*, pp. 56-57 (diagram).

‡ *Some Facts About Mount Shasta*, by F. H. MacNeil, in *Mazama*, December, 1915, vol. IV, no. 4, p. 20.

§ *Nine Days on the Summit of Shasta*, by B. A. Colonna, in *The Californian*, March, 1880, vol. I, no. 3, pp. 242-248.—Also in *Chambers's Journal* (Edinburgh), Fourth Series, no. 878, October 23, 1880, pp. 673-676.

impossible. In the meanwhile Colonna had ample opportunity of observing the phenomena at the summit, particularly the effects of altitude on the several visitors who stayed for a night or two at his camp. In spite of discouragement, he stuck to his post, and at last succeeded in exchanging flashes with the observers on Mount St. Helena. This line, of 192 miles, was the longest that had ever been observed.

The United States Geological Survey began a reconnaissance of the Cascade Range in 1883, and in that year the Shasta region was hastily mapped topographically by Gilbert Thompson.\* During the following year a special survey of Mount Shasta was made by Eugene Ricksecker, United States Geological Survey, resulting in the production of the *Mount Shasta Quadrangle*, which was used as the basis for the first relief model of the mountain, prepared for the New Orleans Exposition.†

Shasta's splendid domination over the whole region led it to be hailed during the first few decades after its discovery as the highest mountain in California, and even of the Pacific Coast; indeed, it was estimated by some to be as high as 18,000 feet above the sea. Among men of scientific training, however, there seems to have been a more moderate idea of the height; for instance, we read in Wilkes' report that, "Its height is said to be fourteen thousand three hundred and ninety feet, but Lieutenant Emmons thinks it is not so high."‡ Whitney's single barometrical measurement of 1862 placed the altitude definitely at a few hundred feet over fourteen thousand, and a series of eleven barometrical observations made several years later by W. S. Moses with instruments supplied by the Smithsonian Institution gave a result of 14,437 feet. Results obtained by the United States Geological Survey in the field-work of 1883 placed the height at 14,380 feet (intended for 14,389) on the maps, but more recent information has thrown doubt on the accuracy of these figures.§ Tests with a boiling-point thermometer at the summit by Alexander G. McAdie in 1903 and 1905 gave a height of 14,200 feet. The most accurate measurement yet obtained is that of the

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\* *Existing Glaciers of the United States*, by Israel C. Russell, in *Fifth Annual Report of the U. S. Geological Survey*, for 1883-84, pp. 332-334.

† *Mount Shasta: Some of Its Geologic Aspects*, by J. S. Diller, in *Mazama*, December, 1915, vol. IV, no. 4, p. 12.

‡ *Narrative of the United States Exploring Expedition, During the Years 1838, 1839, 1840, 1841, 1842*, by Charles Wilkes, U.S.N., 1845, vol. V, p. 240.

§ Alexander G. McAdie, in *SIERRA CLUB BULLETIN*, 1906, VI:1, p. 11.



United States Coast and Geodetic Survey, which places the altitude at 14,162 feet.\* Allowing for a discrepancy of a few feet one way or the other, Shasta can still be considered one of the highest peaks in the United States, in beauty and majesty rivaled only by Rainier.

The mountaineering possibilities of Mount Shasta have been too much neglected. To be sure, the climb is not difficult when one follows the usual trail from Mount Shasta City (formerly the town of Sisson) eight miles to Horse Camp at timber-line; and thence to the summit over long snow-slopes, up a coulée near The Thumb, over the lava and volcanic ash of Misery Hill, across the upper plateau, and up the last few hundred feet of steep rock to the summit. From the south, also, the ascent is comparatively easy if one starts at "The Gate" or any other point in the forest. The lower regions on this side of the mountain have been claimed by brush so dense that the old trail that once led up the cañon of Mud Creek from McCloud is now all but obliterated. It is on the north and east—sides seldom seen even by mountaineers—that the most spectacular climbing can be found if desired. The great tumbled masses of Bolam, Hotlum, and Wintun glaciers descend abruptly between jagged lava spurs and offer all that a mountaineer could desire in the way of tests for his skill. So far as I know, however, the ascent by any of these more dangerous routes has never been attempted. The ascent of Shastina, a large crater on the west flank of the mountain some two thousand feet below the main summit, is exceedingly interesting, especially if one follows the route of Muir and King to the shores of the icy lake hidden in the deep elevated amphitheater, and thence up the ridge beside the Whitney Glacier to the main crest.

It is largely due to the enthusiastic efforts of M. Hall McAllister, of the Sierra Club, that Shasta now begins to take its place among California's great mountain recreation areas. Through his initiative, in 1922, a fine stone lodge was constructed at Horse Camp, under the auspices of the Sierra Club.† Throughout the year this building offers shelter to the storm-bound. During the summer months the attendant makes a record of all who leave to climb the peak, and is thus prepared to search for any parties that are unaccounted for. The first winter use of the lodge was made by two San Franciscans who climbed the mountain on February 22, 1924. On

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\* F. E. Matthes, in *SIERRA CLUB BULLETIN*, 1914, IX:3, p. 190.

† *SIERRA CLUB BULLETIN*, 1923, XI:4, pp. 438-440 (illustrations).

New Year's Day, 1925, Dr. Hans Lauper, of the Swiss Alpine Club, Doctor Eloesser, of San Francisco, and two companions, made an interesting climb to the summit, which Doctor Lauper has described in an article published in the July (1925) number of *Die Alpen—Les Alpes*, the monthly review of the Schweizer Alpenclub (Club Alpin Suisse).

Some extraordinary records have been made on the 6000-foot climb from Horse Camp to the summit. In August, 1883, Harry Babcock, of San Francisco, set a record of three hours and forty minutes, which is not known to have been beaten until, forty years later, in 1923, Norman Clyde made the ascent in three hours and seventeen minutes. After resting a day, Clyde bettered his own record by climbing over the same route in two hours and forty-three minutes. But this remarkable record was not destined to stand for another long period. An alpine race was held on the mountain on July 4, 1925, the contestants starting from the Sierra Club lodge at Horse Camp and ascending for most of the distance upon snow. David Lawyer, of Pasadena, eighteen years of age, won the race in the extraordinary time of two hours and twenty-four minutes. Competent timers were stationed at the start and at the summit. Second place was won by Barney McCoy, of Siskiyou County, in two hours and thirty-six minutes. A computation made from alpine climbers' records in Europe has shown that an average of thirteen feet per minute above 12,000 feet is good time, while at lower altitudes an average of twenty-four feet is fast. Yet here is a record of over forty-one feet per minute on a continuous climb of six thousand feet, attaining an altitude of over fourteen thousand feet. It would seem that Mount Shasta presents an excellent opportunity for obtaining valuable data on the speed and stamina of mountain-climbers.

Geographically, Shasta occupies a unique situation. Rising from a four-thousand-foot plateau, it would at first sight seem to be a connecting-link between three mountain masses—the Sierra Nevada, a hundred miles to the southeast; the Cascade Range, whose southern terminus is but fifty miles to the northeast; and the diversified ridges of the Klamath Mountains, just westward across Strawberry Valley. Shasta is a part of none of these mountain masses, but its relationship to them is exceedingly important, since it seems to furnish a clue to the solution of the complex problem of plant and animal distribution on the peak.





“SHASTA BUTTE” FROM THE NORTHWEST—1855

One of the earliest published views of Mount Shasta

From a lithograph in Pacific Railroad Survey Reports, volume vi (Williamson Survey)





CANOEING IN THE SIERRA NEVADA  
Photograph by Robert L. Lipman



The story of the origin of the surrounding land masses is simple. Many millions of years ago, in the Cretaceous Period of the earth's geological history, the Pacific Coast shore-line followed approximately what is now the western base of the Sierra Nevada and the Cascades. To the westward lay a huge island covering most of the area of northwestern California and southwestern Oregon. Beneath the waters of the wide strait between this island and the mainland lay the foundations of Mount Shasta. On the island, the Klamath Mountains were raised. Then came the uplifts that formed the Coast Ranges in California and Oregon, and, later, the tilting up of the Sierra Nevada block and the building up of the Cascade Ranges, the latter mainly of volcanic materials. A glance at the map will show Shasta as a locus, close to three mountain masses, each of which had a separate origin.

It is scarcely necessary to repeat the well-known fact that Mount Shasta is one of the world's great extinct volcanoes. Its activity may even have come within the prehistoric memory of mankind. An authentically recorded legend told by the Indian tribes living near the base represents the mountain as a great wigwam, the home of the Great Spirit, whose lodge-fire was seen to smoke by day and to burn by night long before the coming of the white man.

Diller has admirably summarized the simple geological story of the origin of Shasta: "Mount Shasta is a great accumulation of volcanic material about the vent from which it issued. The larger portion of the mass is made up of coulées or streams of molten lava that welled up in the throat of Mount Shasta to the surface and overflowed from the crater on top or burst through the crater wall and reached the surface by a fissure in the mountainside. The volcanic activity of Mount Shasta began in early Tertiary time (Eocene) and continued by alternative active and quiet periods for many millions of years upbuilding the mountains. Most of the activity was effusive, pouring out flows of lava one over the other, but there was also much material ejected in the form of volcanic ashes and pumice by explosive action which produced in many places layers of fragmental material between the sheets of lava."\*

John Muir believed that the mountain is not dead but slumbering. Certainly after being so badly scalded in the hot spring and

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\* *Mount Shasta: Some of Its Geologic Aspects*, by J. S. Diller, in *Mazama*, December, 1915, vol. IV, no. 4, p. 13.

fumarole near the summit on the memorable night of April 30, 1875, he had ample proof that Shasta's soul of fire still lived. Little wonder that he wrote "We can hardly fail to look forward to its next eruption."\*

Built by the powers of heat from within, Shasta has been truncated, rounded, and fluted from without by water, mostly in the form of grinding ice-streams. Hotlum, Bolam, Whitney, Wintun, and Konwakiton glaciers are still scouring industriously in their cañons and pouring out streams laden with glacial flour upon the plains below. During the glacial epoch they were much larger, but even now they are not to be despised. Northward and eastward they cover most of the rocks above the ten-thousand-foot level and terminate beneath heavy deposits of morainal debris at about nine thousand feet. The broad snow-fields of the south and west slopes offer the climber thrilling, never-to-be-forgotten glissades, but the vestigial glaciers of these warm and dry exposures are regretfully small. If only the railroad had followed the old emigrant trail along the eastern base of the mountain its scenic quality would have been very much greater.

The most remarkable trait of Shasta streams is their illusiveness. Most of them can't be seen at all and others have a habit of disappearing as you follow down their courses. The porous slopes are ever ready to absorb moisture and to allow it to flow underground unimpeded until, at the lower slopes, it gushes forth in mighty springs that give birth, full-fledged, to the McCloud and Sacramento rivers and other important streams.

An unusually extensive mud flow in July of 1924 inundated the highway and the tracks of the McCloud River Railroad, and covered an area six miles long by one mile wide with sand and rocks to a depth of five to ten feet. The rapid melting, during a series of hot days and warm nights, of the previous winter's scant supply of snow caused excessive erosion at the sides and beneath Konwakiton Glacier; a large mass of ice is supposed to have broken off and glissaded down the cañon where it finally formed a dam and impounded a lake. With the sudden failure of this natural dam a flood rushed down the cañon of Mud Creek carrying a load of sand and boulders. Great quantities of this comparatively light pumiceous material, as well as large cobbles, can be transported by swiftly

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\* *The Mountains of California*, by John Muir, 1894, p. 12.



moving water, but if the current slackens for a moment they fall to the bottom. This large mud flow of 1924 illustrates how alluvial fans or "dry-land deltas" are formed at the mouths of practically all cañons which are subject to sudden torrents. Normally, this continues from year to year in a manner less striking, but cumulatively as effective.

Anyone who wanders through Shasta's upper forest zone cannot but be struck by the abundant evidences of avalanches. Not only does one frequently discover areas where huge trunks are piled like jackstraws, but even more often one sees toward the summit wide lanes, evenly cut through the open forest, marking the paths of earlier disasters. By measuring the age of the seedlings that dot these areas one might uncover an interesting bit of the mountain's yesterday. So frequent are these avalanches that they play an important rôle in the distribution of the timber of the upper slopes.

Biologically, also, Shasta presents many interesting problems. From its position at the junction of the Sierra, the Cascade, and the Klamath mountain masses, it might be assumed to have a flora and fauna that would bear a resemblance to those of all three ranges and would be especially rich because of overlapping species. Such is not the case. A thorough study in 1898 by Dr. C. Hart Merriam brought out some exceedingly interesting facts and relationships.\* Firstly, Mount Shasta is much drier than any of the three surrounding mountain masses, and therefore the number of species of both plants and animals is less than might be expected. Secondly, the geographical barriers (in this case lowlands) between the mountain and the neighboring highlands give no indication by their extent of the biological relationships to these areas.

The animal and plant life of Shasta is quite different from that of the Klamath Mountains just to the westward. Rainfall and humidity have, of course, much to do with the limitation of the range of species; but when we remember that that area was isolated as an island for many millions of years we should naturally expect characteristic indigenous flora and fauna differing from those of the surrounding areas.

Doctor Merriam's researches show that biologically Shasta is much more nearly related to the northern Sierra than to any other

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\* *Results of a Biological Survey of Mount Shasta, California*, by C. Hart Merriam, *North American Fauna*, no. 16, U. S. Biological Survey, 1899.

region, even though the separating lowland gap is twice as great as that between it and the Cascades. There are many species of plants and animals common to the Sierra Nevada and the Cascades, but there are also many that are restricted to either one range or the other. By classifying the Shasta plants and animals found above the Transition Zone (or main pine-timber belt) we have an accurate index of the relationship to the adjacent areas to the northeast and the southeast. This is here presented in tabular form to facilitate comparison:

A TABULAR SUMMARY OF THE BOREAL SPECIES OF MOUNT SHASTA

	Shasta, Sierra and Cascades		Shasta and Sierra		Shasta and Cascades		Shasta alone		Total	
	Ind.	%	Ind.	%	Ind.	%	Ind.	%	Ind.	%
MAMMALS:	26	72.3	7	19.4	1	2.8	2	5.5	36	100
BIRDS:	41	87.3	4	8.5	2	4.2	0		47	100
PLANTS:	55	50.0	30	27.3	17	15.4	8	7.3	110	100

It is interesting to note that the typical Sierran birds and plants are approximately twice as numerous on Shasta as are representative Cascade forms. Among the mammals, however, the Sierran species show a preponderance of seven to one.

The species peculiar to Shasta alone present a subject for conjecture and research. In a recent letter Professor Willis Linn Jepson comments upon this, saying: "Endemism is a matter of considerable interest in relation to Shasta. The mountain carries a few species that are strictly endemic and more that are restricted to the group of volcanic cones, which of course includes Lassen Peak. Probably the number of species of localized distribution occurring on or around Shasta will be increased as the region is explored."

Shasta was once surrounded by beautiful pine forests, and is even now well forested on its comparatively unknown eastern flank. The lumberman and fire, however, have caused hundreds of thousands of acres to degenerate into brushland where normally there should be dense stands of sugar pine, western yellow pine, and incense cedar. Even as early as 1865 Whitney wrote: "Before July the snow is hardly gone from the camping-ground, from which the ascent to the summit and the return is to be made in one day; and, after that month, the incessant fires in the surrounding forests fill the air with smoke and take away all distinctness from the distant view."\*

\* *Geology*, vol. I, Geological Survey of California (J. D. Whitney, State Geologist), 1865, p. 333.



Those who have "learned to read the trailside" in the Sierra will recognize similar life-zones as they ascend Shasta; indeed, the resemblance to the northern Sierra is very striking. If fire had been kept out, the trail from Mount Shasta City (Sisson) would pass beneath the shade of a second-growth pinery instead of across hot wastes of brush. At present only an occasional sugar pine, white fir, incense cedar, or western yellow pine reminds one that he is in the Transition Zone or main timber belt. Higher is the Canadian Zone, with magnificent forests of Shasta fir, a variety of the true red fir (*Abies magnifica*), and occasional individuals of the mountain pine (*Pinus monticola*). The stunted alpine forests of the Hudsonian Zone are picturesque in the extreme with their gnarled and contorted white-bark pine and, in moist places, graceful alpine hemlocks. Many of the plants characteristic of these zones in the neighboring ranges are lacking, however, on account of drought. To use Doctor Merriam's words:

"The flora of Shasta, contrasted with that of moister mountains immediately north and immediately south, is poor in species and individuals; and the same is true in less degree of the fauna. At least nineteen characteristic genera and numerous additional species of plants common to the Sierra and Cascades are unknown; and to these must be added the distinctive species of each range which fail to reach Shasta. The luxuriant mountain meadows and flower-beds that form such conspicuous features of the timber-line region in the Cascades, the Olympics, the High Sierra, and the Rocky Mountains are wholly absent, and the only areas that in any way resemble them are the insignificant patches of mountain heather and accompanying plants that carpet the moist bottoms of the glacier basins and form narrow beds along the tiny streams, where they are concentrated by the local distribution of soil moisture. The only real soil above timber-line is restricted to the borders of the streamlets, where the decomposing heather has left a shallow covering. Everywhere else are pumice, broken lava, and barren cliffs."

There are several unique species of plants and animals on the mountain. A dozen years ago, while I was working in the logging-camps some thirty miles east of Shasta, some lumbermen returning from a fishing trip to Antelope Cañon told me of some fine specimens of "larch" they had seen there. The next Sunday I eagerly set forth to make the discovery that would greatly extend the southern limit of the range of *Larix occidentalis*. A twenty-mile walk led me across broad pumice fields to one of the most wonderfully verdant box

cañons I have ever seen. The wild gardens of Antelope Cañon and the hemlock-bordered lakes in the glacial cirques above seemed as near paradise as any earthly place could be—and yet a thorough search did not disclose the hoped-for larch. The next week I repeated the long walk with the man who had seen the trees, only to find that they were splendid specimens of Shasta fir. An authentic discovery of a similar nature, however, has recently been reported to the botanical world. The Engelmann spruce, which is rare even in central Oregon, has been reported from one of Shasta's cañons. We may without doubt look forward to the discovery of other unusual plants and animals when the Shasta region is more thoroughly explored.

Another interesting bit of Shasta's natural history once appeared in the *Scientific American* of January 30, 1915, under the title "Fighting Caterpillars with Steam," a subject which not only grips the popular imagination, but which also furnishes basic facts that are exceedingly important to the ecologist in his studies of the relation of plants and animals to their environment, giving at the same time a possible clue to one of the causes of the virulent and destructive forest and brush fires of the region.

There are two insects, the common California tortoise-shell butterfly (*Vanessa californica*) and a moderate-sized buff-colored moth (*Melacostoma fragilis*), that periodically multiply in enormous numbers and seriously upset the normal ecological balance. Thus the larvae of the latter species, the Great Basin tent caterpillar, became so numerous in the summer of 1914 that they devoured practically every green leaf excepting those of the evergreens over an area of hundreds of square miles. Migrating caterpillars invaded our logging-camp and became such a nuisance that ditches had to be dug to keep them out. Millions of food-hunting larvae found an easy path along the rails of the logging railroad with the result that the tracks became so slippery that the heavy logging-trains could not be moved because of lack of traction, or, once in motion, could not be slowed down on dangerous grades because of skidding. Men were stationed on the cowcatchers of the locomotives to sweep the caterpillars from the rails with brooms, but this proved unsuccessful. Finally, when the lumber company was considering expensive ditching, its chief mechanic invented a double steam jet that extended out in front of the engine and destroyed the insects by means



of live steam. Piles of dead caterpillars accumulated along the tracks, but the trains were operated in safety by the use of this simple invention. Dr. Edwin C. Van Dyke, who was at that time studying this great insect outbreak, pointed out the fact that such infestations occur periodically (another one came in 1921), and that the forest and brush fires that are the scourge of the region are probably unusually malevolent in those years because of the defoliation and killing of great brush areas by the caterpillars. The relation of the periodic fires and insect attacks is exceedingly important economically, and is one of the many unusual and interesting problems that the Shasta region presents for the study of the forester, the entomologist, the ecologist, and other scientists.

It is gratifying to realize that the Sierra Club has recently turned its attention to this noble mountain and that more and more people interested in mountaineering and in the scientific and educational aspects of our highlands are visiting Mount Shasta. The Sierra Club lodge has been a great help in making the mountain popular, and has substantially reduced the difficulties of visiting the upper regions. Shasta deserves a visit from every true mountain-lover. For those who seek rough ways, untrodden fields, and the challenge of difficult climbs, the eastern side will afford all that the heart may desire. But, whether approached from this, its sterner side, or from the more familiar route at the west, Shasta is worthy of its place among the loftiest peaks of the country.

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## THE TRAILS OF THE YELLOWSTONE

BY HORACE M. ALBRIGHT,

SUPERINTENDENT OF YELLOWSTONE NATIONAL PARK



ALMOST the only feature of the Yellowstone National Park that has not been the subject of book or story is its trail system, which is unique in that few of the paths through the vast forests and into the mountain heights of the park are man-made. There are over a thousand miles of trails in Yellowstone Park, more than eight hundred of which are kept available for ranger patrol and for visitors afoot and with pack outfits. Of this far-flung system of trails, only a few miles, comparatively speaking, have been built by human hands. The elk, mountain-sheep, bear, and buffalo have wrought these paths through generations of travel. It is a marvel to human travelers on these trails, on learning of their origin, that the wild-life engineers are capable of establishing such excellent grades, for few game trails are excessively steep. It is also amazing that these foot-paths of countless animal hoofs take courses in the mountains that open such stupendous views of park scenery. Of course, the reason is that in following his instinct for self-preservation the wild animal seeks view-points from which to sweep the surrounding country.

It is this system of game trails that the Sierra Club will cover in part next summer. The chief interest of the club's trip and its greatest thrills will come, not from attaining dizzy heights on hitherto unclimbed peaks, but from glimpses of elk and moose and other species of big game animals that inhabit the wildernesses of the Shoshone and Heart Lake region, the Upper Yellowstone country, and the territory surrounding Mount Washburn and Electric Peak.

There is not sufficient space in a brief article to do more than sketch the general outline of the Yellowstone trail system, and comment a little more specifically upon the particular sections of the system that the Sierra Club party will cover.

Because the park is America's greatest game preserve, full of valuable fur-bearing animals, as well as the larger mammals, such as bear, buffalo, moose, and elk, whose heads and hides, and, in the





MOUNTAIN SHEEP



AN OLD BUFFALO BULL

YELLOWSTONE NATIONAL PARK—A GAME REFUGE





MOUNT SHERIDAN AND RED MOUNTAIN FROM HEART LAKE

Yellowstone National Park

Photograph by Phillips, National Park Service



case of elk, teeth, are capable of bringing fancy prices; and because the park is surrounded by men to whom game laws mean nothing, rangers must patrol the boundaries of Yellowstone in all seasons—in summer with horses, in winter on skis. Therefore, we have a system of boundary trails, following the exterior lines of the park as nearly as the topography of the country will permit. Ranger stations on this system are twenty to thirty miles apart, and between these stations are the snow-shoe cabins used by the rangers in winter, and stocked in the autumn with bedding and food supplies. In summer, hikers may use the snow-shoe cabins.

In the center of the park, in the shape of a figure 8, is the Grand Loop Road system, which connects all of the principal points of interest—the geysers, the hot springs at Mammoth, the Cañon, and Lake Yellowstone. Paralleling this highway system is the Howard Eaton Trail, a “Grand Loop” trail, named in honor of the founder of the Wyoming “dude ranch,” and famous guide of scores of horseback parties through Glacier and Yellowstone national parks. Howard Eaton, who died in April, 1922, always took his parties along the roads, using trails where there were any cut out for horses; and following him, always on the roads, were his wagons, with bedding, tents, and food for his “dudes,” as all visitors who come to the park by train are called.

In 1923 the National Park Service connected up all these sections of trail paralleling the roads. We thus have the boundary trails as the outer circle, and the Howard Eaton Trail as the inner circle trail system. At all important points branch trails leave these systems and go out into wild forested regions for protection against fire or poachers, or to make accessible some isolated scenic attraction. For instance, from Mammoth Hot Springs there are trails leading to the boundaries at Gardiner, Gallatin, Crevice, and Riverside; there are short trails to the summits of Bunsen, Sepulcher, and Everts peaks, and there are foot-trails over the great limestone terraces.

In the trip suggested for the Sierra Club its members will cover parts of the Howard Eaton Trail, here and there a section of the boundary system, and many of the short side-trip paths at points of supreme importance.

Before sketching this proposed trip, there is one other significant thing about the Yellowstone that should be touched upon. It is the greatest wilderness left in the United States. Roughly the size of

Delaware and Rhode Island combined, or 3348 square miles, it is three times the size of Yosemite National Park. Surrounding it on all sides are seven national forests of immense size. Excluding the parts of these forests in which there are settlements and ranches, there remain over two thousand square miles of wild mountain and forest territory. Hence the Yellowstone and its outskirts contain over five thousand square miles of the wildest part of the Rockies—"wildest" because unpenetrated by forms of civilization other than a sparse threading of roads. These roads, however, are few, and there are areas of five hundred square miles in which they are wholly absent.

Over eighty per cent of the area of the Yellowstone is heavily forested with lodgepole, limber, and white-barked pine, Engelmann spruce, Douglas fir, and juniper. Aspen grows in great abundance, and there is much alder and willow. The open spaces consist of grassy park lands, inhabited nightly by elk, and swampy river bottoms wherein dwell the wary moose.

It is this combination of vast forests, in places almost impenetrable, of game trails and abundant wild life, and the absence of any sort of settlement—conditions as they were a hundred years ago when the lonely trapper first came into the region—that makes this the great American wilderness of today. It is into this wilderness that the Sierra Club will go for the greater part of its visit to the park.

Upon arriving at West Yellowstone, the party will be taken in busses up the Madison River road, through a cañon of volcanic cliffs, to National Park Mountain, at the junction of the Gibbon and Firehole rivers. This mountain gets its name from the historical event that took place at its base on the 19th of September, 1870, when the Washburn-Langford-Doane exploring party was encamped there. For here originated the national-park idea in the proposal of Cornelius Hedges that, instead of acquiring the newly discovered wonders for themselves, the members of the expedition should endeavor to establish a great national park that might be forever preserved for public enjoyment. This proposal was adopted enthusiastically by these Montana pioneers, and on March 1, 1872, President Grant signed the act of dedication making Yellowstone our first real national park.

At National Park Mountain the west approach highway joins the Grand Loop Road, and the Sierra Club will proceed on up the Fire-



hole River to Nez Percé Creek in Lower Geyser Basin. Here will be the first lunch-camp, near the trail that Chief Joseph and his Nez Percé Indians took in 1877 as they crossed the park pursued by General O. O. Howard. The club will go on the same day nine miles farther, following the Howard Eaton Trail into the Upper Geyser Basin and to Old Faithful, where the first night's camp will be established.

Leaving the Old Faithful camp, the route will be over the Howard Eaton Trail to Lone Star Geyser, three miles to the southeast; thence over the Continental Divide and down Shoshone Creek to Shoshone Lake. At Lone Star Geyser the road system is left behind, to be crossed only twice at long intervals in the next two weeks. There is excellent fishing for brook trout in Shoshone Creek. In fact, unless the streams are still too high, fishing should be good all along the route from Old Faithful to Grand Cañon.

Shoshone Lake is the second largest in the park. Here also, are numerous exquisitely colored pools and a geyser basin rarely seen by visitors to the park. There is a fine meadow near by for the horses. Camp will be pitched on the lake shore, and at this point the party will begin to sense the charm of the Yellowstone wilderness.

Following the trail around Shoshone Lake, the party will find many splendid views of this big body of water, and in due time the estuary, or natural canal, long and straight, connecting Shoshone and Lewis lakes, will be reached. Here a fording problem will have to be solved, probably with the aid of rangers, and perhaps with boats, but the event will be safe, though perhaps exciting. On the other side of the canal, the trail joins the Sheridan Trail, which runs from the south boundary to the Howard Eaton Trail via Lewis River, DeLacy Creek, and Craig Pass. This trail was named after General Phil Sheridan, who, in 1883, led President Chester A. Arthur's party along this route to the heart of the park.

Lewis Lake, third largest lake in the park, is set in the midst of a dense forest, and cannot be seen very often from the Sheridan Trail. Just beyond the north end of the lake the south approach road is crossed, and the trail plunges into a lodgepole forest that covers the north slopes of the Red Mountains. The Red Mountains terminate abruptly on the east in Mount Sheridan, a name applied by geologists in designating it as one of the two great prehistoric

volcanoes of the Yellowstone; the other being Mount Washburn, known geologically as the Sherman Volcano. The trail leads along the northern base of the range to the head of Witch Creek, which is about the weirdest stream in all the national parks. This creek has hot springs, steam-vents, and fumaroles on both sides and in its middle for almost its entire length. It is particularly interesting where it passes around Factory Hill, a northern buttress of Mount Sheridan, covered with steam-vents which in the early morning give the impression of being a group of factories in an industrial city.

Heart Lake lies immediately under Mount Sheridan. With its rounded shore line of white geyserite and wide fringe of trees, and with the mountain rising three thousand feet above it, this lake is the most delightful of all the lakes of the park. On its shore is the Heart Lake Geyser Basin, which few people have beheld in all the history of the park. Rustic Geyser is its finest exhibit. The lake is full of cutthroat trout, and is proclaimed by many fishermen as the best fishing lake of the northern Rockies. Of course, the Sierra Club party will climb Mount Sheridan (over 10,300 feet) to get the magnificent panorama of the park and the Teton Mountains which its summit presents.

Heart Lake drains into the Snake River, main tributary of the Columbia, and the party will reach and ford this river the day it leaves Heart Lake. Beyond the Snake, the trail leads up Big Game Ridge. Elk should be seen in bands in this elevated region. The view from Big Game Ridge is splendid, and continues as the descent to Fox Park is made along the south boundary trail. Crossing Fox Creek in an alpine park, the boundary trail will be left to the right a short distance, as the party goes via Mariposa Lake, where there is again excellent fishing for cutthroat. The lake gets its name from the familiar lily that grows luxuriantly in this southern section of the Yellowstone.

Beyond Mariposa Lake, the Continental Divide is again crossed, and the trail begins to descend Lynx Creek to the valley of the Upper Yellowstone. Splendid scenery will be observed in every direction, as the walls of lava rock rise higher and higher on both sides and the cliffs of the Trident across the Yellowstone valley come into view. This is the wildest and most isolated section of the park, and just outside, in the territory that is to come into the park through pending legislation, the mountains rise to twelve thousand



feet and culminate in Younts Peak, in which there are many living glaciers, the sources of the Yellowstone River.

Camp will be made on Bridger Lake, named for the intrepid Jim Bridger who trapped in the park region nearly a hundred years ago. There will be fishing here from shore and raft, and at dusk moose will come to feed on lily-pads out in the lake a short distance from the grassy bank. It is unlikely that any camp will surpass in interest the night at Bridger Lake.

Turning northward on leaving Bridger Lake, the trail crosses Thorofare Creek and pursues a winding course down the Yellowstone under the two westerly and northerly prongs of the Trident. It does not wander far from the river, and fishing may be had at every turn. Moose are likely to be seen in the willows, and in the open meadow-lands the advance guard will catch glimpses of elk herds that will vanish in the timber upon getting the human scent. A trained naturalist-ranger will be with the party, and he will endeavor to hold these views of animal life as long as he can, so that all may enjoy them.

Wild flowers will be abundant on all these trails, and the route along the Yellowstone will treat the party to the rarer varieties, such as monk's-hood, and the great white columbine.

Sixteen miles north of Bridger Lake the southeast arm of Lake Yellowstone will come into view, and at Beaverdam Creek the waters of the Lake will be reached, and there all fishing-tackle should be in readiness for immediate use, as the big cutthroats will be hungry for the rarely seen fly. If boats of the Bureau of Fisheries are available at Beaverdam Creek, naturalists of the party can go over to the extremely interesting Mollie Island and see the white pelicans nesting in the sand.

Lake Yellowstone is one of the great mountain lakes of the world. Its altitude is 7735 feet, its shore line 100 miles, its surface area 139 square miles, or 89,000 acres. The trip northward along the lake shore will be full of pleasure. The views of the lake will be superb, fishing will be good, the forests will be interesting; in the sands of the shores at Park Point petrified wood and other curious specimens can be seen and studied. At length the Cody Road will be reached and near it the outlet of Lake Yellowstone, crossed by the road on the famous Fishing Bridge, the site of Senator Walsh's proposed dam that the Sierra Club helped to defeat.

From the lake outlet, the last lap of the all-trail trip will be taken to the cañon, either by the wilder east-side trail or by the route through Hayden Valley, the old bed of Lake Yellowstone when it was 160 feet higher, passing Sulphur Mountain and Alum Creek, where Jim Bridger's big horse shrunk to a Shetland pony after drinking of the waters.

At the Yellowstone Cañon, the Sierra Club camp will be on the east side of the river on a level spot dotted with pine trees. It is one of the most beautiful camping-places in the park. Besides it has an interesting history, for here on the night of September 21, 1869, the Folsom-Cook party, Yellowstone's first organized exploration party, camped after viewing the cañon and falls for the first time. Trappers probably saw the cañon earlier; but if they did, the colored walls did not make a sufficiently great impression on them to bring forth a definite description. Therefore, so far as we can ascertain from extant records, Charles W. Cook, of the Folsom-Cook party, who is still living at White Sulphur Springs, Montana, was the first white man to behold this most beautiful of Yellowstone's many and varied features.

The writer has tried several times to describe the cañon of the Yellowstone but cannot find words adequate to do this. Many others have likewise failed in this effort. No one has been entirely successful. Even Kipling found himself groping for the means of expression for what his eyes beheld, and finally wrote this:

"All I can say is that without warning or preparation I looked into a gulf 1700 feet deep, with eagles and fish-hawks circling far below. And the sides of that gulf were one wild welter of color—crimson, emerald, cobalt, ochre, amber, honey splashed with port wine, snow-white, vermilion, lemon and silver-gray, in wide washes. The sides did not fall sheer, but were graven with time and water and air into monstrous heads of kings, dead chiefs, men and women of the old time. So far below that no sound of its strife could reach us, the Yellowstone River ran—a finger—a wide strip of jade-green. The sunlight took these wondrous walls and gave fresh hues to those that nature had already laid there. . . . The cañon was burning like Troy town, but it would burn forever, and, thank goodness, neither pen nor brush could ever portray its splendors adequately."

There are trails along both rims of the cañon, and to the brink of the Upper and Lower falls. There is also the Uncle Tom's Trail to the river at the foot of the Lower (or Great) Fall, which drops sheer



308 feet in enormous volume throughout the summer. The Sierra Club will of course devote a day to tramping these cañon trails, drinking in the loveliness of this superb masterpiece.

Other trails that will delight the lovers of wilderness charm, particularly the fishermen, are those leading to Grebe and Wolf lakes, northwest of the Cañon Hotel. These lakes are at the head of the Gibbon River, but are only a few miles from the Yellowstone. Grebe Lake is full of big rainbow trout, and grayling also abound. For those who prefer stream-fishing, the Seven-Mile Hole in the Yellowstone River, seven miles down the right bank from the Sierra Club camp, will appeal very strongly. This is a noted fishing-place and has been eagerly sought by anglers for forty years.

The day the cañon camp is left, or earlier if preferred, the summit of Mount Washburn should be visited. The entire party should make this trip. Part of this trail is man-made, part by elk, and the section above timber-line by mountain-sheep. The wily sheep are likely to be seen near the summit, and elk may appear in one or more large herds in the soft green pastures around the 8500-foot contour. The unique and interesting Washburn Hot Springs, rarely seen by Yellowstone visitors, will also be visited.

Descending Mount Washburn on the north side by an elk trail that leads down Antelope Creek, the party will come to Tower Falls. Here is another Yellowstone cañon, as deep as the colored gorge, but totally different in its formation. Here the river has cut a way through rock formed of mud flows, and through columnar basaltic lava streams. Geologically, this cañon is as interesting as anything in the park. The trail leads on to Camp Roosevelt, where President Roosevelt and John Burroughs spent a few days in April, 1903, viewing the elk herds and other park animals.

At Camp Roosevelt, Park Ranger-Naturalist H. S. Conard, of Grinnell College, the "Harold Bryant" of the Yellowstone, will take the party in charge for a hike over the trails of Specimen Ridge to the petrified forests and to the secret fossil-fields, into which none but tried and true lovers of unspoiled nature are taken. The view of the Lamar Valley from the summit of Specimen Ridge is unsurpassed. If time can be spared for a two days' knapsack trip to the Upper Lamar, the great buffalo herd of nearly eight hundred animals can be seen on its summer range.

Other walks from Camp Roosevelt may be taken over trails to

Lost Lake, where moose and elk are usually seen, or to Elk Creek, with its wonderful beaver workings. Trails down the Yellowstone lead to excellent fishing in the month of August, and it will be August when the Sierra Club reaches the Roosevelt country.

The next move will be by bus to Mammoth Hot Springs, although a trail parallels the road over this eighteen-mile stretch of open park lands, the great fall range of the elk herds. At Mammoth, camp will be pitched at the "Buffalo" Jones Ranch, where the "show" herd of bison is kept.

A royal welcome will await the party at Mammoth, as this is headquarters and the home of the executive officers of the park. Here too will be the last camp-fires of the Yellowstone trip, and every effort will be exerted to make them memorable as outstanding entertainments of the Sierra Club.

Many trails radiate from headquarters—to Mount Everts, to Bunsen Peak, to Sepulcher Mountain, and to Electric Peak (11,155 feet), the park's highest mountain. By all means, the Sierra Club party must climb Electric Peak, because it is a peak with character and interest and from its summit the entire Gallatin Range can be seen and studied. If time permitted, a knapsack trip along the backbone of this range, with trips to the summits of Joseph, Gray, Bannock, Antlers, Three Rivers, and Holmes would be a fitting conclusion to a mountaineering sojourn in Yellowstone.

The trip from Mammoth Hot Springs to West Yellowstone will be by bus, but the Howard Eaton Trail parallels the highway to Madison Junction, and can be seen from time to time. This final journey will be intensely interesting, and a fine climax to a unique and wondrous outing; for in rapid succession the Hoodoos, Golden Gate, Obsidian Cliff, Roaring Mountain, Norris Geyser Basin, the Gibbon River and Falls, and a score of lesser features will pass in review.

Bewildered and happy, and undoubtedly with reluctance, the party will pass under the western portal of Yellowstone National Park to the waiting train, leaving the trails to a few late-season groups, and then to the elk and the rangers, who after all love them best.





ABSAROKA RANGE—POLLUX AND CASTOR PEAKS

Yellowstone National Park

Photograph © by J. E. Haynes





THE CAÑON OF THE YELLOWSTONE

Photograph by Lee L. Stoppie



## READING UP ON THE YELLOWSTONE

BY FRANCIS P. FARQUHAR



THE Yellowstone National Park is almost like a foreign country upon a first visit. It is full of strange and remarkable things—a vast museum with countless objects calling for explanation. There are so many astonishing sights on either hand that one is inclined to forget that just beyond, in the great back-country of the park, are still more wonders and even grander scenes than those along the beaten path. There is, moreover, a human history of the region, which, while brief as such things go, is nevertheless full of interesting episodes and many vivid characters. It is a good plan, therefore, to frequent libraries and bookstores before making a trip to the park.

For the benefit of those who may desire to go prepared with some definite knowledge of what to expect and a general background for their observations, the following lists are presented. They do not purport to be a complete bibliography, but for all ordinary purposes they should serve as a sufficient field from which to make selections. The first two sections comprise a well-balanced and easily obtainable library on the Yellowstone National Park. The supplementary lists contain a wide range of publications offering profitable and enjoyable reading. Most of the volumes can be found in the larger libraries, although a number are out of print. A few are much harder to find, but are included because of their interest or historical importance.

### A.—GOVERNMENT PUBLICATIONS

The first thing to do in reading up on the Yellowstone is to obtain the current government publications. Write to the *Director of the National Park Service, Department of the Interior, Washington, D. C.*, for the following:

1. *Rules and Regulations, Yellowstone National Park.* (Latest annual.) Free.
2. *Motorists' Guide—Yellowstone National Park.* Free.

Next, write to the *Superintendent of Documents, Government Printing Office, Washington, D. C.*, sending remittance by post-office money order, for the following:

3. *Geological History of Yellowstone National Park*. By Arnold Hague. 24 pages, illustrated. Price, 10 cents.
4. *Geysers of Yellowstone National Park*. By Walter Harvey Weed. 32 pages, illustrated. Price, 10 cents.
5. *Fossil Forests of the Yellowstone National Park*. By F. H. Knowlton. 32 pages, illustrated. Price, 10 cents.
6. *Fishes of the Yellowstone National Park*. By Hugh M. Smith and W. C. Kendall. (Bureau of Fisheries Document 904.) 30 pages, illustrated. Price, 5 cents.
7. *Panoramic View of Yellowstone National Park*. (Map, 18 by 21 inches.) Price, 25 cents.

At the same time it would be well worth while to order from the Superintendent of Documents a book that contains a number of fine illustrations of Yellowstone as well as of all the national parks:

8. *National Parks Portfolio*. By Robert Sterling Yard. 248 pages, including 306 illustrations. Bound in cloth. Price, \$1.00.

Maps can be purchased from the *Director of the U. S. Geological Survey, Washington, D. C.*, or may be obtained from local dealers at a small advance over the government price. Of the following, the large map of the entire park is essential; the others may prove useful in providing knowledge of the adjacent region:

9. *Map of Yellowstone National Park*. Size, 28½ by 32 inches; scale, two miles to the inch. Price, 25 cents.
10. *Livingston, Crandall, Ishawooa, Mount Leidy, Grand Teton Quadrangles*. (5 sheets.) Price, 10 cents each.

#### B.—LEADING BOOKS ON THE YELLOWSTONE

Without question, the two most important books on the Yellowstone are:

1. *The Yellowstone National Park: Historical and Descriptive*. By Hiram Martin Chittenden. 350 pages, illustrated.
2. *Haynes' New Guide and Motorists' Complete Road Log of Yellowstone National Park*. By J. E. Haynes. 192 pages, illustrated.

If not found locally, these books can be ordered from J. E. Haynes, Selby and Virginia avenues, St. Paul, Minnesota.

General Chittenden's book was first issued in 1895 and has gone through several editions. It is well composed, and is the most complete and authoritative book on the park. The early history of the region affords many fascinating tales: the thrilling adventures of John Colter, the fabulous stories of Jim Bridger, the mysteries of



unknown trappers; the pursuit of hostile Indians; and the varied experiences of exploring parties. A comprehensive summary is given of the principal natural features: animals, flowers, forests, as well as the geysers, mud springs, terraces, and other curiosities.

*Haynes' Guide Book* is the result of many years of evolution in presenting the material in the most convenient form. It is one of the most satisfactory guide-books to be found for any part of the world, and has an advantage over most in being thoroughly illustrated with well-taken and finely reproduced photographs. Its reliability is vouched for by the National Park Service.

Next in importance among the general books dealing with the park comes:

3. *The Discovery of Yellowstone Park, 1870.* By Nathaniel Pitt Langford. 188 pages, illustrated.

This is Langford's diary of the expedition that resulted in establishing the Yellowstone National Park by act of Congress, March 1, 1872. Originally published by Langford himself in 1905, it has recently been reprinted by J. E. Haynes in uniform style with *Haynes' Guide*. The quaint sketches and early photographs of the original have been retained. The "discovery" party, composed of some of the most reputable citizens of Montana, was organized for the purpose of determining finally and positively whether there was any truth in the wild tales of spouting fountains, hot springs, mud volcanoes, and other hellish things. The leader of the party was General Henry D. Washburn, surveyor-general of Montana. Langford became, two years later, the first superintendent of the Yellowstone National Park. To Cornelius Hedges, one of the members of the party, belongs the distinction of suggesting that this marvelous region should be made a national park. Besides being an historical document of great interest, this diary is an entertaining account of an exploring expedition in which men of more than ordinary individuality came day after day upon new and unexpected features of the most astonishing character.

Another general book, found in most libraries and obtainable, is:

4. *Wonders of the Yellowstone.* Edited by James Richardson. 256 pages, illustrated.

This was first issued in 1872, and has appeared in several editions. The chapters are drawn from the official reports of government ex-

peditions and surveys by Barlow, Doane, and Hayden, and from articles contributed to *Scribner's Monthly Magazine* by Hayden, Langford, and Everts. As most of these reports and articles are now difficult of access, this book is very useful in making this material available. The chapter entitled "Thirty-seven Days of Peril" describes an adventure that received wide publicity in its day and may well be read with profit by present-day visitors who have a tendency to wander from the trail.

The scientific features of the park are covered very well by the government pamphlets already mentioned and by the references to more extensive technical works to be found therein. In the field of natural history there are several good current books dealing specifically with the Yellowstone region. They are:

5. *The Yellowstone Nature Book*. By M. P. Skinner. 1924.
6. *Trees and Flowers of Yellowstone National Park*. By Frank E. A. Thone. 1923. 70 pages, illustrated.
7. *Trees and Shrubs of Yellowstone National Park*. By P. H. Hawkins. 1924. 125 pages, illustrated.
8. *Birds of Yellowstone National Park*. By M. P. Skinner. 1925. 192 pages, illustrated.

#### C.—SUPPLEMENTARY BOOKS ON THE YELLOWSTONE

The following books deal primarily with the Yellowstone region and provide a good variety of reading supplementary to the group already mentioned. There may be some difficulty in finding the earlier ones, but a search is well worth while:

1. *The Great Divide*. By the Earl of Dunraven. 1876. (Reprinted in 1917 under title of *Hunting in the Yellowstone*; edited by Horace Kephart.)
2. *Calumet of the Coteau*. By P. W. Norris. 1884.
3. *Through the Yellowstone Park on Horseback*. By G. W. Wingate. 1886.
4. *The Passing of the Old West*. By Hal G. Evarts. 1921.
5. *Maw's Vacation—A Human Being in the Yellowstone*. By Emerson Hough. 1921.
6. *On the Trail in the Yellowstone*. By Wallace Smith. 1924.

#### D.—BOOKS CONTAINING IMPORTANT CHAPTERS OR SECTIONS RELATING TO THE YELLOWSTONE REGION

The list of books under this heading could be expanded indefinitely, and only a representative selection is given here:



1. *Camp and Cabin*. By Rossiter W. Raymond. 1880.
2. *Nez Percé Joseph. History of the Nez Percé Campaign of 1877*. By General O. O. Howard. 1881.
3. *The Book of the Boone and Crockett Club*. Edited by Theodore Roosevelt and George Bird Grinnell.
4. *Vigilante Days and Ways*. By N. P. Langford. 2 vols. 1890.
5. *Our National Parks*. By John Muir. 1901.
6. *The Biography of a Grizzly*. By Ernest Thompson Seton. 1903.
7. *Wild Animals at Home*. By Ernest Thompson Seton. 1913.
8. *Your National Parks*. By Enos Mills. 1917.
9. *The Book of the National Parks*. By Robert Sterling Yard. 1919.
10. *The Cross Pull*. By Hal G. Evarts. 1920.
11. *Down the Yellowstone*. By Lewis R. Freeman. 1922.
12. *The Call of the Mountains*. By LeRoy Jeffers. 1922.

#### E.—MAGAZINE ARTICLES

Since the discovery of its wonders, in 1870, there has been a vast number of articles on the Yellowstone region in all manner of periodicals. Many of the scientific articles have appeared elsewhere in reports or books, and many of the general articles have been superseded by fuller and better accounts. Therefore, only a few of the outstanding ones are selected for this list. Some of these have been reprinted in books already listed:

1. *The Wonders of the Yellowstone*. By N. P. Langford. In *Scribner's Monthly*, vol. 2, nos. 1 and 2—May, June, 1871.
2. *Thirty-seven Days of Peril*. By Truman C. Everts. In *Scribner's Monthly*, vol. 3, no. 1—November, 1871.
3. *The Wonders of the West. More About the Yellowstone*. By F. V. Hayden. In *Scribner's Monthly*, vol. 3, no. 4—February, 1872.
4. *Ascent of Mount Hayden*. By N. P. Langford. In *Scribner's Monthly*, vol. 6, no. 2—June, 1873.
5. *The Three Tetons*. By Alice Wellington Rollins. In *Harper's New Monthly Magazine*, vol. 74—May, 1887.
6. *An Elk-Hunt at Two-Ocean Pass*. By Theodore Roosevelt. In *Century Magazine*, vol. 44—September, 1892.
7. *Yellowstone National Park Game Exploration*. A series of articles by Emerson Hough in *Forest and Stream*, May 5 to August 25, 1894.

#### F.—GOVERNMENT REPORTS

Most of the government reports included in the following list are out of print and are no longer to be obtained from the Superintendent of

Documents. They can usually be found in the larger libraries, however. They are valuable sources of information for those who wish to go deeply into the history and character of the park:

1. *Annual Reports of the Superintendents of the Yellowstone National Park, for 1872, 1877 to 1915.* In *Annual Reports of the Secretary of the Interior*. (Since 1915 these reports have been included in the *Annual Reports of the Director of the National Park Service*.)
2. *Annual Reports upon the Construction, Repair, and Maintenance of Roads and Bridges in the Yellowstone National Park, 1890-1918.* In *Annual Reports of the Chief of Engineers, War Department*.
3. *Exploration of the Yellowstone River in 1859-1860.* By Bvt. Brig.-Gen. W. F. Raynolds. 1868. (40th Congress, 1st Session, Senate, Ex. Doc. No. 77.)
4. *Geological Report of the Exploration of the Yellowstone and Missouri Rivers, 1859-1860.* By Dr. F. V. Hayden. 1869.
5. *Report of Lieutenant Gustavus C. Doane upon the So-called Yellowstone Expedition of 1870.* 1871. (41st Congress, 3d Session, Senate, Ex. Doc. No. 51.)
6. *An Engineer Report of a Reconnaissance of the Yellowstone River in 1871.* By Captain J. W. Barlow and Captain D. P. Heap. 1872. (42d Congress, 2d Session, Senate, Ex. Doc. No. 66.)
7. *Fifth Annual Report of the U. S. Geological Survey of the Territories for 1871.* By F. V. Hayden. 1872.
8. *Sixth Annual Report of the U. S. Geological Survey of the Territories, for 1872.* By F. V. Hayden, 1873.
9. *Twelfth Annual Report of the U. S. Geological Survey of the Territories, for 1878. Part II.* By F. V. Hayden. 1883.
10. *Reconnaissance of Northwestern Wyoming in 1873.* By Captain William A. Jones. 1875.
11. *Reconnaissance of the Streams and Lakes of the Yellowstone National Park, Wyoming.* By David Starr Jordan. In *Bulletin of U. S. Fish Commission*, vol. IX, for 1889.
12. *Reconnaissance of the Streams and Lakes of Western Montana and Northwestern Wyoming.* By Barton W. Evermann. In *Bulletin of U. S. Fish Commission*, vol. XI, for 1891.
13. *Geology of the Yellowstone National Park.* By Arnold Hague and others. U. S. Geological Survey, Monograph No. XXXII, Part II. 1899. Accompanied by Atlas.



## THE MEDICINE BOW MOUNTAINS OF WYOMING

BY FRITIOF M. FRYXELL



PASSING through Laramie, the early summer traveler, if alert, is certain to catch glimpses of a mountain range far to the west: a dark, heavily timbered mountain mass below, rising from the open Wyoming plains; above, a narrow unbroken band of virgin white against the western horizon. If an easterner, our traveler will experience the emotions of him who catches his first eager glimpse of the Rockies' everlasting hills—and it is at Laramie that many a west-bound traveler has had this unforgettable experience. If he be a veteran mountaineer, his interest will be piqued by this range: so heavily burdened with snow for the season and latitude, and possessing such a remarkably even crest, apparently uninterrupted by peak or pass. In either event, this will be his introduction to the Medicine Bow Mountains, and to the Snowy Range—finely named—which caps them.

A modest, almost obscure member of a great mountain family, the Medicine Bow Range has remained relatively unknown, except locally; for though thousands of travelers annually view it from the windows of the Union Pacific coaches, as the great trains, following the old Overland Route, swing around to the north of this mountain barrier, few ever seek to know it more intimately. Yet here is a range of unique character and beauty.

To liken great things to lesser, as Milton says, one may compare the Medicine Bow Mountains to an inverted, flat-bottomed boat. The keel, running a short distance the length of the boat, will then correspond to the Snowy Range; the boat itself, flat on top but becoming steep around the sides, will represent the main part of the mountain mass. Here is a remarkable physiographic situation: *one range resting upon another!* How unusual it is, and how strikingly distinct from each other the two units are, cannot be appreciated unless seen.

The analogy of the boat falls short in one important particular: it offers no parallel to the cañon zone which encircles the steep outer margin of the mountains, next the plains. There are no foothills about the Medicine Bow Mountains.

Three provinces, then, are passed in turn by the summit-aspiring climber after he leaves the plains: first, the encircling cañon zone; then the great flat top of the lower range, called "the plateau" for lack of a better term; and finally—provided his endurance has not taken alarm and deserted!—the Snowy Range, crowning all. If his starting-point be Centennial (thirty-five miles west of Laramie), the best and most convenient gateway to the Medicine Bow Mountains, his objective will be eleven miles in direct line to the northwest. Through this part of the range he will find the three provinces well defined.

The cañon zone extends from about 8000 feet, the altitude of the plains, to perhaps 10,500 feet. It offers typical Rocky Mountain scenery: deep cañons radiating outward, rugged ridges between them, and dense timber everywhere. The ridges are mantled, the valleys almost choked, with moraine. Yes, the Medicine Bows have been glaciated, heavily so.

Through this zone one must mount 2500 feet. If roads be disregarded, the climb will prove a difficult one, in places well-nigh impossible. Kettley moraines in the valleys, matted so densely with young lodgepoles and alders as to dim the sunlight; half-buried glacial erratics heaped up with magnificent disregard to order, some fifteen or twenty feet in diameter, as big as a cabin, plucked from the plateau or Snowy Range up beyond, carried here by a monster glacier now extinct; thundering mountain streams perennially fed by the gleaming snow-fields occasionally glimpsed through the trees, far to the west—streams that in spring and early summer swell as their nurturing snow-fields wane, and become raging, foaming torrents that no one may venture to cross with impunity save over some providentially directed windfall; long ridges, fire-swept and littered in wildest confusion with countless prostrate logs, thrown eastward by the prevailing winds: here a recent burn, still so black and void of life that one almost fancies the smoke still rising from smouldering fires; again, another, less recently burned, the wound mercifully healed over with a fresh growth of delicate yellow-green aspens which has perhaps already been invaded by a throng of sturdy young lodgepoles; or perhaps an occasional stretch of original forest, untouched by flame, peopled with mature, nobly fashioned Douglas firs, Engelmann spruce, lodgepole pine, and limber pine, not crowding each other in the struggle for light and moisture, but standing in



open, neighborly groves through which one may walk over matted pine needles with noiseless step in aisles cool and shaded.

Normal glaciated cañons, when followed upward to their heads, are found to terminate in cavernous glacial cirques, bitten deep into the higher ranges; but in the Medicine Bows most of them flatten out onto the plateau and here almost or wholly lose their identity. Similarly the rock spurs, separating the cañons, rise and broaden to meet the plateau. Here is a situation which I have not seen duplicated elsewhere in the Rockies. At an altitude of 10,500 to 11,000 feet, where one would confidently expect to find the most rugged and spectacular scenery, there is instead a broad, placid upland of remarkably little relief: a region of low, barren rock knobs, morainal hills, and shallow valleys. The geologist will explain this upland as being the remnant of a very old topography, older than the mountain range itself—older far than the vigorous young cañons which for unmeasured centuries have attacked it from every side, and will ultimately destroy it. For the cañon zone is widening at the expense of the plateau.

Suddenly relieved of the necessity of stiff climbing, one strolls leisurely across this mountain Elysium as in a dream. And truly much of the beauty here is of the perishable stuff of dreams: pale momentary shadows across the snow; the close, blue heaven overhead; the deeper blues of alpine forget-me-nots, innumerable as the stars, carpeting the open meadows; the blinding whiteness of the Snowy Range, which now, one eagerly discovers, is almost at hand; and above the range, marshaled into a great white host, the still clouds, children of the hour.

Heavy forests share the outskirts of the plateau with the meadows. This is surprising, for timber-line cuts the plateau. But most unusual and favorable factors offset altitude: the great Snowy Range encircles the plateau protectingly to the northwest; water from the melting snowbanks is inexhaustible; and glacial drift mantles the more inhospitable bed-rock. So here, at timber-line, there are trees; not a few stunted individuals, but extensive forests of fine big Engelmann spruce in which one may find giants four feet or more in diameter!

Through these forests one may tramp in July over unbroken drifts that bury the tree roots under four or five feet of snow. So effectually is the sun excluded that many of these drifts linger almost all

the year round. In hollows on the upland I have seen snow-drifts that in early July were fifteen feet deep!

The forests here, too, have been fire-stricken, and reforestation is tardy. Over wide areas the killed trees still stand, and among these are the strangest tree-forms due to fire that I have ever found: odd corkscrews and grotesque totem-poles, the latter curiously pitted and scarred by lingering embers which persisted long after the flames were extinguished, and ate deep into the wood. Where unscarred, the trunks have silvered with age, and are beautiful even in death.

The higher part of the plateau, near the Snowy Range, is almost treeless, and therefore, during the summer, snowless. Here are barren, ice-polished rock domes, bearing scattered glacial boulders which look strangely conspicuous and out of place, like ships stranded at low tide. They were dropped here by the retreating ice front. Occupying the depressions and hollows are meadows, peat-bogs, and lakes.

True, there are lakes everywhere in the higher areas of the Medicine Bows, many of them unmapped and most of them unnamed; some, like Trout Lake, lying wholly in the woods, reflecting the spruces and firs that close in on every margin, their banks tracked by deer and bear; others—and these are the most abundant—nestled close to the foot of the Snowy Range. About the latter are few trees if any; in their depths are mirrored great stretches of sky, snow, and mountain. Lake Marie and its neighbors are of this character; and are as beautiful as any lakes I have seen in the mountains of the West.

But ever closer and more majestic, beautiful in elevation, towers the Snowy Range, until, pausing on the great barren reaches about its rugged base, one becomes momentarily oblivious to all lesser features of the mountains, conscious solely of this vast overwhelming presence. For here one stands among the high places of the earth, alone with the range.

The Snowy Range, the highest province in the Medicine Bow Mountains, is a crescent-shaped ridge of colossal proportions, resting on the center of the great upland. The crescent is about seven miles long, is widest and highest near the middle, where it rises about one thousand feet above the plateau, and is turned with the inner face toward the southeast. It is built of a rock very unlike the granites which ordinarily form the higher Rockies: a clear, white quartzite



of remarkable purity and beauty, sometimes occurring in a brilliant emerald or a deep magenta variety. Where snowless and free from lichens, the range glistens in the sun as though made up of great blocks of translucent white glass. "Snowy Range" would be a fitting name even if the range never bore snow.

Viewed from any point on the plateau near its eastern base, the Snowy Range affords a scene of magnificent sweep and grandeur. Not an obstruction to the view: the entire arc is visible, from north end to south, from even crest to roughened, buttressed base; a panorama into which enter only snow and rock and sky—for the Snowy Range is lifted high above the limits of tree life, and only on closer view may one discover the humbler plant forms which seek and find a hospitality on its wind-swept heights.

For some unexplained reason, the ancient glaciers of the Snowy Range were far smaller and feebler on the west side than on the east side; to this fact may be attributed the greater beauty of the eastern slope of the Medicine Bow Mountains. With the dawn of the Ice Age, glaciers were born in the recesses of the Snowy Range and flowed down onto the plateau. Here they coalesced and, as a mighty ice sheet, advanced with unbroken front out over the lower mountains, actually achieving the level of the plains at the mouth of Libby Cañon. Valleys were filled and ridges over-ridden by the irresistible flood; every feature of the landscape was obliterated and buried as though for eternity. But for the mountains it was not a death—rather, a purification, a preparation for new birth. The warmth of summer seasons returned, the winters waned, the ice covering dwindled to slender tongues, lingering in the valleys; and finally these retreated to their hollows in the Snowy Range, and vanished.

In the wake of the ice came the flowers and the forests, finding foothold and nourishment where none had been before, in the mantle of soil and boulders spread over all the quickening landscape. Life pulsated in the hills once more.

Great and far-reaching everywhere were the changes wrought by the ice, but nowhere are they so spectacularly displayed as on the eastern face of the Snowy Range. Into this the ice quarried to a depth of hundreds of feet, pushing the crest of the range westward almost half a mile, and leaving at its disappearance a great precipitous cliff almost a thousand feet high, extending from one end of the Snowy Range to the other, a distance of seven miles! In fact, the

entire eastern face of the Snowy Range, the inside of the crescent, is the wall of a single, vast glacial cirque, produced by the breaking down of the ridges between smaller ones.

If the Snowy Range be climbed—and it is readily scalable—from its crest the mysteries of the Medicine Bow Mountains are revealed unto their utmost bounds: the full sweep of the range beneath one's feet, the plateau with its wealth of lakes and forests a thousand feet below, and then the dark ridges and cañons of the lower mountains, a hazy blue, stretching on and on to meet the plains. Not only are the entire Medicine Bow Mountains visible, but also other mountains, lonely peaks and groups of mountains, far out on the plains: Elk Mountain to the northwest, Sheep Mountain and the Laramies to the east, and far to the south the white pinnacles of the Colorado Rockies. It is a panorama which may not be described, the climax of the many memorable experiences which come to one who climbs among these mountains.

Such, then, are the Medicine Bow Mountains as seen in the light of summer days. They are always holding for the invitation, "Come and see!" The time to come matters little; the mountains will be found in the beauty of the particular hour and season, changeless yet never twice the same, but ever radiant and full of charm for the lover of the mountains.





THE CREST OF THE SNOWY RANGE



THE PASS (ALTITUDE, 11,000 FEET)

THE MEDICINE BOW MOUNTAINS OF WYOMING  
Photographs by Fritiof M. Fryxell



VILLAGE OF ASTEGG. ABOVE THE ZILLERTAL  
Photograph by Marion Randall Parsons



## SPRING IN THE TYROL

BY MARION RANDALL PARSONS



### I. IN THE ZILLERTAL

THREE weeks of city rain; a casual talk with a train acquaintance who had been on a ski trip; railroad embankments prophetic of a coming glory of primroses, crocuses, and violets—these, as far as I can remember, were the determining factors that led to my invasion of the Zillertal one evening in early April. From Jenbach, an hour's ride east of Innsbruck, a short branch railroad leads to Mayrhofen, a village of some 1500 inhabitants lying close under the great glacial wall of the Zillertal Alps. No one ever goes to Mayrhofen in April, I was told upon my arrival. On learning that I was an American, however, Mayrhofen resigned itself to the unusual and took me in. I lived by preference in a private house, for, as my landlord said of the two best inns, the one kept a pig and the other kept the smell, and both in consequence were *unangenehm*.

In summer-time, and in the season of winter sports as well, Mayrhofen is, for mountaineers, a starting-point only. A section of the Austrian Alpine Club has its headquarters in the village, for the Ziller range, rising to an altitude of from 10,500 to 11,500 feet, boasts many interesting climbs. Within a day's walk of Mayrhofen, moreover, are situated the Berliner Hütte (at 2050 meters), the Greizer Hütte (2098 meters), the Riffler Hütte (2234 meters), the Olperer, the Plauerner, and many another mountain hospice of the Alpine Club. Up one tributary valley, too, the Tuxertal, and over the Tuxerjoch, one may in summer knapsack across country by trails leading ultimately to Merano and the Brenta Dolomites; or, more to eastward, at the head of the Zillergrund, cross the range and descend to Bruneck or Tobblach, in their turn starting-points for many Dolomite excursions. Not, however, if one is mountain-wise, traveling Dolomite-ward before devoting a generous share of one's time to the Ziller Alps. For, whatever may have been their relative charms before the war, this more northerly region is still untraversed by motor roads and has not been fought over, and is the fresher and more beautiful of the two regions today.

In April, however, nearly all of these mountain trails were still closed. For a thousand feet only above the valley floor one could climb up through the fir forests—to Brandberg, clinging to a narrow meadow-ledge above the Zillergrund, or to Astegg, a primitive village cupped in a hanging valley above the Zillertal. Happily the valley itself (about 2000 feet in altitude) had many attractions—high walls forested with snow-burdened firs; the great gleaming range shutting in the southern horizon; a milky glacial river; lovely Tyrolian peasant houses with silvered roofs of old unpainted shingles held down by lines of stones; with wooden walls weathered to a rich red-brown, and yellow-brown woodpiles sheltered under ample balconies. Unlike our own untenanted high country, furthermore, there was the constant interest of the mountain people. On Sundays and holidays they still turn out in the Ziller costumes—men in gray jackets, short trousers, knitted leglets that leave knee and ankle bare, and marvelously millinered hats; women in aprons and shawls of old brocade and flat hats of black felt, high-crowned and yellow-tasseled. They are pleasant people, more dour with the stranger than their southern neighbors, perhaps, but always ready with a *Grüss-gott!* in passing, and willing to match Tyrolese with pidgin-German at need.

Although several falls of snow whitened both heights and valley after my arrival, spring came very fast. Saint George's Day, April 23d, the May-day of the Zillertal, it would seem, was celebrated by a grotesque parade of all the little boys of the village, who, with blackened faces, garlanded necks, heads adorned with goat-horns, and to an unspeakable din of clanging bells, celebrated the *Gras-Ausleiten*. These little spring mummers are doubtless a survival from a very ancient rite—as old, perhaps, as the Roman Parilia, or the gipsy festival at Aigües-Mortes. Indeed, in the children's earnestness in this now meaningless ceremonial; in their elders' more sophisticated *Frühlingsfest*; in the priestly pilgrimage to the high-hung shrine of a forest Virgin, seeking her blessing for the fields: in all these observances could be clearly read the primitive community's preoccupation with the seasons and the soil, as perceptible among these mountain villagers as is the Breton fisherman's preoccupation with the sea.

By the first week in May the valley floor and the lower mountain slopes, meadows and deciduous woods alike, were in the most en-



chanting of spring dress. Behind transparent screens of new-leaved beeches and birches and fine-beaded larches shone white crests, deep valleys of fairy blue, flowering orchards, meadows clear and golden with dandelions and buttercups, or misted with forget-me-nots and purple pansies. In the higher meadows spring gentians appeared, crocuses, primroses, and the little fringed soldanella. Trails were beginning to open up, too, though many of them, in the track of spring avalanches, were dangerous to travel as yet. None the less, sometimes accompanied by German visitors to the valley, or by Veronika, daughter of my landlord, who had an embarrassing way of praying aloud from wayside shrine to wayside shrine as if invoking heaven's protection on the perilous enterprise of taking the road with a heretic—sometimes with these companions, sometimes alone, I made several day trips. The longest and most beautiful of these was to the head of the Stillupthal and back, some thirty-five kilometers.

The Stillup summer pastures were just opening and we had many fellow travelers along the trail that day: boys with droves of cattle, old men carrying churns, a stray knapsacker enjoying an early holiday, a young man toiling up the steep grade with an eighty-pound dynamo in one of the great pack-baskets in which these peasants transport every form of commodity—edibles, the woodpile, or the wash. At our varying paces we made the stiff climb and followed along the riotous stream to the great glacial valley in which it takes its rise. Except for the myriad waterfalls slipping down over polished cliffs, and the dairying huts scattered upon its floor, I might easily have imagined myself to be nearing the headwaters of the Tuolumne. Excepting, also, for the avalanches; for slipping down over these walls came likewise tons and tons of powdered snow—bare cliffs for a minute or two blooming with a Nevada or a Bridal Veil fall, rocketing, ethereal, yet none the less carrying a vast débris of shattered boulders and splintered trees. We watched several on the opposite, sunnier side of the valley, feeling secure under our shadowed wall. But, just as we were reading an inscription beside a shrine telling how a man had been killed by an avalanche on this spot one March day not long past, one started behind us. It proved to be small, lodging in a cranny half-way down. Yet we retreated without dignity and took care widely to skirt the débris piles that marked the avalanche limits of past and, we hoped, snowier springs.

The little *Gasthaus* where we had lunch had just opened for the season. It was typical of all the mountain inns that I saw in that country—commodious and clean as to its winerom; beds not above suspicion, I should fear, though it was not my fortune to experiment on overnight trips; sanitation non-existent. One dines as well as wines in the winerom, warmed by a green *kachelofen*, and with all the family accouterments, sewing-machine, ironing-boards, cradle, and grandmother's knitting, to say nothing of Grandmother herself, scattered among the guests. Bread, cheese, country wine, and a jam omelet—this is the invariable menu for those not addicted to sausages and beer.

The huts of the Austrian Alpine Club were still closed (the opening date, varying with the season, is usually in July), but I was given to understand that upon application to the club headquarters in Mayrhofen an accredited member of a foreign club could later find accommodation there. In the higher huts only a blanket and cot are furnished, and the traveler must provide his own food. Along the knapsacking routes, however, public inns abound. But throughout the Tyrol after the first of July the whole region is thronged with pedestrians, and all accommodations, unless arranged for in advance, are very difficult to secure.

## II. IN THE VAL D'AMPEZZO

All of that region of the southern Tyrol known to mountain-lovers as "the Dolomites," Austrian for many centuries, now belongs to Italy. In the trading centers Austrians still greatly predominate, but in the byways of the Val d'Ampezzo the country people seemed all Italian—in speech, manner, appearance, temperament. That the Sunday dress of the younger women is also Italian in its gay flowering of silken kerchiefs and aprons, ribboned sleeves, and hair and ear ornaments of beautifully wrought gold, may, however, be only a new fashion, a concession to post-war nationalism, for the older women's costumes bear a close resemblance to the Austrian dress. None the less in this southward-opening valley the population seems rather to have followed the natural than the political boundary. That this is far from being universally true of *Italia irredenta*, however, a very frank ethnographical map published in Italy freely admits.

Cortina d'Ampezzo, the most advertised travel center of the Dolo-



mites, is neither of Austria nor of Italy, however, but, like Chamounix, is of touristdom alone. One night there satisfied me, and the next morning, surrounded by my baggage, I drove in a *carrozza* to a modest Italian inn fifteen hundred feet above the famous village. It was not luxurious, my *Albergo*! Its floors were hob-scarred; pigeons strolled unrebuked into the dining-room to garner the crumbs; the family goat even looked wistfully in at the door; to reach the bathroom one traversed most of the village—a village of thirteen souls, twenty chickens, two horses, and the goat and pigeons aforesaid. But there were baths, even hot ones on demand; everything was scrupulously clean; the food was abundant and good—short of a sleeping-bag, a frying-pan, and a Sierra Club comrade, no attraction was lacking for the mountaineer.

For the surroundings were glorious. We were set on a high tableland, sloping up, on the west, to the base of Monte Tofana (3241 meters), to north and east breaking abruptly into the green Ampezzo Valley. By walking for five minutes through the larch woods one came to the sheer drop-off of the Belvedere, where across the valley rose the great ruddy range, cloud-hung often, or with shadowed crannies blue-misted behind the delicate tracery of larches. Of this eastern divide Monte Cristallo (3173 meters) is the culminating point. Other peaks are Croda Rossa (3169), Punta Nera, Punta di Serapia, Antelao. And to the south rise Monte Pelne (3169), Nuvolau (2575), Croda di Lago, and the Cinque Torri. The most beautiful mountain in our vicinity was likewise the highest, Monte Tofana. The sun set behind it, and from its deeply cleft summit the most extraordinary shadows used to be projected—a goblin mountain, looming almost to the zenith, brooding, sinister. The evenings on that wide flowery tableland, rose-rimmed, shadow-haunted, breathing the fragrance of wild cherries and vibrant with the trill of skylarks, have never been surpassed in all my mountain experience.

The Dolomites were named for the French geologist who first made a study of the region—Comte Déodat Guy Sylvain Tancred Gratet de Dolomieu (1750-1801). He described them as of magnesium-lime formation. They are for the most part very bold and picturesque rock masses, highly colored, deep-cleft, exceedingly difficult to climb. Though they are about the same altitude as the Zillertal Alps, they bear much less snow. They were far from free of it, however, when

I left the region the first of July. Apart from their sculpture, their most striking feature is the vast rubble-heaps at their bases. The rock is very friable and with every heavy storm rivers of mud and broken stones pour from the ravines, frequently causing great destruction. Trails and roads have been buried, and even villages.

Unhappily, however, in this range more than one destructive agent has been at work. The war devastation will continue to scar the faces of these mountains for many years. Gun emplacements, marks of shell-fire, trench lines, military roads—Cristallo is gashed and torn with them; beautiful Tofana, too. The valleys of Tre Croce and Lake Misurina, meccas once for summer travelers, are now so scarred and battle-worn that they seem too tragic even to harbor their great companies of the dead. Military cemeteries—one even crowned a hill above the Belvedere. "The Eagles of the Tofana" this gallant band was called, that for two winters and a summer clung to the precipices of Monte Tofana, only to be shot down from their aerie at last. Across the valley, past the Five Towers, and up to the summit of Nuvolau I followed part of the defense line one day. There are trails up Nuvolau, old alpine club trails as well as the more recent military, but they were still deep in snow, and I had to break my own way. This was late in June. All the lower mountain slopes had been stripped of timber to build shelters for the soldiers. Such shelters! I wondered, as I shivered there in the June sunshine, what these little hovels had seen of hardship and suffering in the winter nights of that cruel campaign. Picture a fighting line along the Sierra Crest from the Minarets to Conness, a January tempest raging, mountaineering comrades dying beside you of cold and hunger and wounds—and even then you cannot approach the terrible truth. I was told by members of the Italian Alpine Club that climbing parties in this region still frequently come upon the bones of soldiers among the rocks.

So gruesome and terrible was the war record in this vicinity that I could not bring myself to stay several days at the Alpine Club refuge of the Cinque Torri, as I had planned. And of the several huts within easy striking distance, one only was not war-torn. That, under Croda di Lago, did not open until a day or two before I left. It was a charming place, surrounded with fir forests, under a peak that sloped a mile or two away to a grassy, flowery pass that invited one almost irresistibly to cross it. I was tempted; but it was five



o'clock, and I was already so far from home that a well-meaning Englishman, meeting me on the trail just as I was starting back, put me through a severe cross-examination concerning my whereabouts. I offered him my map, thinking him puzzled on his own account, but said he sternly, "*I* know where I am. But I want to know if *you* know how far you have to walk to get back!"

American travel in the Dolomites is generally limited either to a motor trip on the main tourist circuit or to walking the *Dolomiten Strasse*, as the principal highway is called, from Cortina to Bolzano. I did neither, not greatly to my regret. Indeed, had I found a companion, I would gladly have walked to Bolzano, but by the unfrequented passes, stopping at refuges or at country inns. For by the end of June the *Dolomiten Strasse* is an endless procession of motor-cars—dusty, tiresome, trite. I would rather have my own store of memories—of the evening walks with Gilda or Giulietta up to the summer pasture and back with the brimming copper milk-pail; of the young gentleman from Ferrara (he who could make love to Gilda and Giulietta at one and the same time) and our bilingual, ambidextrous efforts to converse; of the Austrian knapsackers (male), in feathered hats and short trousers, and the German knapsackers (female), unhatted and in long skirts; of that summer dawn when all of the Cortina herds went past on the way to the uplands, and each cow had three human attendants to beguile its way; of the returning milkmaids with hair of Titian red, and the dairymen, their dark skins summer-browned, who paused on their way home that evening to laugh and sing and drink red wine at our inn; of the country wedding that lasted a day and a half; of the flowers.

I can't even begin to list the flowers: the red rhododendron and pink-flowered creeping azalea; the fragrant daphnes, two species, the high-growing *bouquet tout fait* of the foothills, and an alpine species growing close to the ground. I remember glorious masses of this last near Tre Croce, where the earth was almost hidden by pink daphne, cream dryas, and the blue of spring gentians. A purple clematis ran riot in the larch woods. There were pink moss campion and white androsace; primroses, yellow and pink; anemones—sturdy creamy flowers, shaggy and terrier-like in seed like those of Mount Rainier. Ranunculus, too—*trollblumen*—their yellow globes making sunshine in the lower meadows; pink and white orchids, violets, pansies, columbine, and, loveliest of all perhaps, masses of

alpine lilies that at a distance of half a mile gleamed white in the meadows like a sheen of frost.

I should not close these notes without acknowledgment of the cordial reception I met with everywhere from members of the various Alpine clubs. They are very powerful organizations abroad—I have not the authentic figures, but have been told by members that the German and Austrian clubs have a membership of several hundred thousand and the Italian club of about fifty thousand. In the latter club there are said to be different classes or degrees of membership, and to qualify for the highest one must have made fifty first-class ascents, at least half of them without guides. From this standard no less than from their numerical strength, and from the vast number of knapsackers who yearly travel the mountain trails, one gathers that in central Europe today mountaineering as a pastime comes nearer than with us to holding its own against the automobile.

#### WHY CLIMB THE MOUNTAINS?

WHY climb the mountains? I will tell thee why,  
And, if my fancy jumps not with thy whim,  
What marvel? there is scope beneath the sky  
For things that creep, and fly, and walk, and swim.  
I love the free breath of the broad-wing'd breeze,  
I love the eye's free sweep from craggy rim,  
I love the free bird poised at lofty ease,  
And the free torrent's far-upounding hymn;  
I love to leave my littleness behind,  
In the low vale where little cares are great,  
And in the mighty map of things to find  
A sober measure of my scanty state,  
Taught by the vastness of God's pictured plan  
In the big world how small a thing is man!

J. S. BLACKIE

From *The Englishman in the Alps*, edited by Arnold Lunn



# SIERRA CLUB

Founded 1892

402 MILLS BUILDING, SAN FRANCISCO, CALIFORNIA

Annual Dues: \$4.00 (first year, \$5.00)

## THE PURPOSES OF THE CLUB ARE:

*To explore, enjoy, and render accessible the mountain regions of the Pacific Coast; to publish authentic information concerning them; to enlist the support and co-operation of the people and the Government in preserving the forests and other natural features of the Sierra Nevada.*



JOHN MUIR, President 1892 to 1914

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## SIERRA CLUB BULLETIN

*Published annually for the members*

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## EDITORIALS



### PROPOSED ENLARGEMENT OF THE SEQUOIA NATIONAL PARK

The proposal to enlarge the Sequoia National Park, to include the magnificent high mountain area lying between the existing Sequoia National Park and the crest of the Sierra, has come to the front again with the convening of the new Congress. All of our members are familiar with this praiseworthy effort to preserve this wonderful area, including the great Yosemite-like valleys of the Kings and the Kern. John Muir during his lifetime strenuously urged that this area be protected from commercial encroachment before it became too late.

Recently attempts have been made by certain irrigationists to secure permits to flood the Kings River Cañon, Tephite Valley, and others of these incomparable valleys, not for increasing the supply of water for irrigation, but for water-power to sell. This would permanently destroy in a large measure the recreational value of the entire region, since most of the area is rugged and steep, and there are but few broad, level spaces suitable for camping.

In this controversy, which has arisen between those who believe that the interests of the nation would be best served by the permanent reservation of this majestic area as a national park and those who would utilize this nationally owned property for local commercial gain, it should be borne in mind that if these water-power permits are once granted this region will be irrevocably mutilated and its value for national recreational purposes materially diminished for all time. On the other hand, if this area is protected by inclusion within a national park, it is still possible, if necessity becomes urgent enough, to allow such economic use of this area as the circumstances may justify.

The enlargement of this park is one of the most important matters in which the members of the Sierra Club can render aid at this time. W. E. C.



### SHALL THE NATION CONTINUE TO OWN THE NATIONAL FORESTS?

The most dangerous attack upon the public domain that has been attempted for many years was instituted last summer when certain livestock organizations began a campaign before Congress for vested rights in the national forests. At the present time grazing is carried on in these areas by permit from the United States Forest Service. A charge is made for these privileges, and it is the announced policy of the Government that these charges be gradually brought to a point at which they will represent a fair consideration for value received. Under such permits, grazing is regulated in the interests of the public welfare.

The cattlemen and sheepmen now demand that instead of limited permits they be granted definite legal rights to the grazing-ranges, and that these rights be transferable in the same manner as other property. In other words, they seek private ownership of what is now the property of the nation, without regard to the many other beneficial uses to which it might be put.



The very audacity of these demands for a moment weakens the defense. It seems impossible that such an utter abandonment of the principles of conservation could be considered for a moment in this day and age. Yet a bill has actually been introduced in the present Congress devised to accomplish this very thing. The defense lies in the prompt action of organizations and individuals in making known their protests both through the press and by direct communication with members of Congress.

F. P. F.

. . .

**RECOGNITION OF PUBLIC SERVICE** It is natural that the Sierra Club should find itself drawn into closer and closer relationship with the two branches of our Government that administer the national forests and the national parks. In its early days the club did a great deal toward securing these reservations out of a rapidly disappearing public domain. The principles upon which they have been established have always been jealously guarded. The members of the Sierra Club know these parks and forests and realize their importance both to present and to future generations. It is with more than ordinary interest, therefore, that we regard the characters of the men designated by the Government to administer these regions.

Happily, we have from the beginning found them almost invariably men of high ideals, broad sympathy, and unusual ability. We have come to know them well, for they have sat with us around our mountain camp-fires; they have counseled with us; they have been truly of our fellowship; many, indeed, have been members of our organization. With this intimate knowledge we can, therefore, say to the people of the United States that their interests in the national parks and forests are in good hands.

Once in a while some special occasion arises for singling out from among these men one or two who merit more than ordinary recognition. During the past few years the Sierra Club has had many opportunities for observing the splendid organizing ability and unfailing devotion of Paul G. Redington, of the United States Forest Service, and of Horace M. Albright, of the United States National Park Service, and it has seemed fitting that some token of appreciation be extended to them. At a recent meeting of the Board of Directors they were elected life members of the Sierra Club.

Horace Albright has been identified with National Park administration for over twelve years. Since 1919 he has been superintendent of Yellowstone National Park, where he has distinguished himself in many ways, particularly in preserving the herds of buffalo, elk, and other wild animals. As prospective host of the Sierra Club for next summer, he has written the alluring invitation published in this number of the BULLETIN.

Paul Redington has faced a gigantic task in preserving the forests of California from destruction by fire during a period when drought and an enormous increase in travel created an unprecedented hazard. His success in this and in other departments of his work has been due to a rare combination of energy, ability, and qualities of leadership. The announcement that he has been promoted to assistant forester in the offices of the Forest Service at Washington confirms the estimate we have long had of his value to the country. F. P. F.

## REPORTS OF COMMITTEES



### TREASURER'S REPORT

*To the Directors of the Sierra Club:*

The following report on the finances of the Sierra Club for the year ended December 31, 1925, is respectfully submitted.

JOSEPH N. LE CONTE, Treasurer

*Received:*

GENERAL FUND

Dues from 382 new members at from \$3.00 to \$5.00 . . .	\$1,474.00	
Dues from 1633 regular members, at \$4.00 . . .	6,532.00	
Dues for former years . . . 391, at \$4.00 . . .	1,564.00	
Dues for re-instated members 3, at \$5.00 . . .	15.00	
Dues paid in advance . . . 2, at \$4.00 . . .	8.00	
Dues paid by members in U. S. Forest and Park services: 8, at \$4.00 for two years . . .	32.00	
Total dues received . . . . .		\$ 9,625.00
Interest on savings accounts . . . . .	164.25	
Interest on bonds (portion from Permanent Fund) . . .	42.50	
Sale of pins . . . . .	66.80	
Sale of BULLETINS . . . . .	63.05	
Advertising in BULLETIN . . . . .	456.88	
Advertising in local walks schedule . . . . .	70.16	
Sub-lease of portion of office . . . . .	340.00	
Miscellaneous small receipts . . . . .	8.00	
Total miscellaneous receipts . . . . .		1,211.64
Total received . . . . .		10,836.64
Less checks returned unpaid . . . . .		15.00
Net amount received . . . . .		<u>\$10,821.64</u>

*Disbursed:*

General Administration:

Salary of Assistant Secretary . . . . .	\$1,200.00
Extra clerical help . . . . .	37.50
Office rent, Room 402, Mills Building . . . . .	900.00
Office expenses: postage, stationery, supplies . . .	277.65
Telephone and telegraph . . . . .	127.98
Bi-monthly circular and other printing . . . . .	688.00
Election expenses . . . . .	81.50
Directors' traveling expenses . . . . .	49.25
Sundry small expenses . . . . .	38.79
	<u>\$3,400.67</u>



Bulletin:

Printing . . . . .	\$2,565.00	
Cuts and photographs . . . . .	318.68	
Distribution . . . . .	282.75	
Cost of securing advertisements . . . . .	53.47	
		3,219.90

Local Walks:

Printing of three schedules (club's share) . . .	191.13	
Distribution; stamps and envelopes . . . . .	49.44	
		240.57

Chapters:

Southern California Chapter . . . . .	984.25	
San Francisco Bay Chapter . . . . .	379.00	
		1,363.25

Mountain Lodges:

Le Conte Memorial Lodge, salary custodian . . .	105.00	
Expenses, repairs, etc., on Le Conte Lodge . . .	31.46	
Nature-guide service at Parsons Lodge . . . . .	150.00	
		286.46

Miscellaneous:

Taxes . . . . .	104.75	
Library . . . . .	7.43	
Purchase of club pins . . . . .	37.90	
Dues to other organizations . . . . .	32.00	
Contribution to National Conference on Outdoor Recreation . . . . .	100.00	
Contribution to National Conference on State Parks . . . . .	50.00	
Contribution to Mount Logan expedition . . . . .	50.00	
Davis lecture in San Francisco . . . . .	111.00	
Register-boxes for Sierra peaks . . . . .	50.00	
		543.08

Total disbursed . . . . . \$ 9,053.93

Summary:

Net amount received . . . . .	\$10,821.64	
Balance January 1, 1925 . . . . .	4,103.24	
Total . . . . .	14,924.88	
Total disbursed . . . . .	9,053.93	
Balance December 31, 1925 . . . . .	\$ 5,870.95	

On hand:

Crocker First National Bank . . . . .	\$ 1,291.61	
American Bank of San Francisco . . . . .	3,632.81	
Mercantile Trust Company of California . . . . .	921.53	
Office cash fund . . . . .	25.00	
Total . . . . .	\$ 5,870.95	

<i>Received:</i>	PERMANENT FUND	
Five new life memberships . . . . .	\$	250.00
Interest on savings account . . . . .		67.22
Part interest on Liberty Bonds . . . . .		42.50
Total received . . . . .		359.72
Balance January 1, 1925 . . . . .		3,623.21
Balance December 31, 1925 . . . . .	\$	3,982.93
<i>On hand:</i>		
Liberty Bond, 3d, 4¼ per cent, par value . . . . .	\$	1,000.00
Liberty Bond, 4th, 4¼ per cent, par value . . . . .		1,000.00
American Bank of San Francisco, cash . . . . .		1,982.93
Total . . . . .	\$	3,982.93
<i>On hand:</i>	ROBERT S. GILLETTE FUND	
Securities at par value of . . . . .	\$	1,000.00
<i>On hand:</i>	SPECIAL MEMORIAL LODGE FUND	
Securities at par value of . . . . .	\$	5,000.00
<i>Received:</i>	MEMORIAL LODGE CURRENT FUND	
Interest on Gillette and Special Lodge funds . . . . .	\$	268.75
Balance January 1, 1925 . . . . .		339.67
Total . . . . .	\$	608.42
<i>Disbursed:</i>		
Part payment of Salary Shasta Lodge Custodian . . . . .		100.00
Balance December 31, 1925 . . . . .	\$	508.42
	NATIONAL PARKS FUND	
<i>On hand:</i>	(Roosevelt-Sequoia Enlargement Fund)	
American Bank of San Francisco, cash . . . . .	\$	1,874.29

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#### SECRETARY'S REPORT FOR THE YEAR 1925

##### *To the Members of the Sierra Club:*

During the past year 328 new members joined the club; and 396 were dropped from the list because of death, resignation, and non-payment of dues. The total membership at the beginning of the year 1926 was 2723.

The activities of the club have been so fully set forth in the printed minutes of the directors' meetings contained in the bi-monthly circulars, together with the other information published in these circulars, that an annual report by the secretary is chiefly of value in summarizing what has been going on.

The greatest single accomplishment in the club's work that has taken place



during the past year has been the securing of an additional appropriation of \$10,000 from the State Legislature, which received the favorable indorsement of the Governor, for the continued construction and repair of the John Muir Trail in the High Sierra. It has also been due to the club's active insistence and the generous co-operation of the National Park Service that another trail, which John Muir during his lifetime was anxious to have undertaken, has been completed; namely, one down the Grand Cañon of the Tuolumne, connecting the Waterwheel Falls with Pate Valley. This trail now opens up and makes easily accessible the great cliffs, waterfalls, and cascades of this marvelous cañon, which heretofore has been visited only by the hardy knapsacker. The club also takes a certain pride and satisfaction in the publication by the California Historical Society of a monograph entitled "Exploration of the Sierra Nevada." While the credit for this splendid piece of work is due to its author, Francis P. Farquhar, nevertheless it was largely owing to the inspiration and information which he obtained from the club and related sources that this publication, which is so thoroughly in line with the main objects of the club, was made possible.

We also view with satisfaction the expenditure of over one million dollars on the main roads leading into the Yosemite and Sequoia national parks. While the great credit for securing such generous appropriations from Congress is due to the magnificent work of Honorable Stephen T. Mather, Director of the National Park Service, nevertheless he also received his inspiration for park work originally from the Sierra Club, and if it had not been for the determined efforts of the club the Yosemite Valley itself would probably not now be under national control and administration. No fair-minded person can now question the wisdom of placing this valley under Federal jurisdiction.

The club during the past year has also continued its support of the lodges in Yosemite Valley, in Tuolumne Meadows, and on Mount Shasta, and has contributed to nature-guide work carried on in the Tuolumne Meadows under the auspices of the National Park Service.

The club has also inaugurated a new plan of educational work in the gathering of a magnificent collection of mountain photographs to be loaned to educational and other institutions throughout the state for exhibition purposes.

While there has been a slight decrease in the total membership during the past year, this was largely due to the automatic dropping from the list of those who had ceased to pay dues. The finances of the club are in better shape than ever, and the club looks forward with confidence to a new year of promise and greater opportunity for carrying on its good work. The proposed enlargement of the Sequoia National Park by Congress will occupy our main interest, and we trust that all of our members will rally loyally to the support of this cause.

Respectfully,

WM. E. COLBY, Secretary

## MOUNTAINEERING NOTES

EDITED BY FRANCIS P. FARQUHAR



### FIRST ASCENT OF MOUNT LYELL—1871

The old register of Snow's Hotel, "Casa Nevada," that stood for many years just below Nevada Falls, is now in the Yosemite Museum. Recently, in looking over the names recorded therein, I came upon that of J. B. Tileston, Boston, June, 1871. Recalling that Hutchings, in his *In the Heart of the Sierras*, 1886 (page 488), mentions an ascent of Mount Lyell by a Mr. Tileston, of Boston, it occurred to me that the two references might be to the same man.

Through the assistance of Allen Chamberlain, of the Appalachian Mountain Club, I was very quickly put in communication with Mrs. Mary Wilder Tileston, of Brookline, Massachusetts, who informed me that her husband, the late John Boies Tileston, had indeed climbed Mount Lyell in 1871. He spent the summer of that year in the Yosemite region, making headquarters at Clark and Moore's (now Wawona).

Through the courtesy of Mrs. Tileston, we are able to publish the following extracts from his letters, describing the ascent of Mount Lyell on August 29, 1871. The quotations are from *Life and Letters of John Boies Tileston*, privately printed by Mrs. Tileston in 1922. Mr. Tileston was born in 1834, and died in 1898.

"Camp at Foot of Mt. Hoffmann, Monday, August 14. [1871.]

"It is a week today since I started. It has been a week of unusual interest, filled with sight-seeing of the grandest sort, from last Monday, when I left Clark's, and came by the Mariposa Trail and Inspiration Point into Yosemite, camping for the night under its great walls, about a mile below the grand precipice of El Capitan, up to yesterday, when I ascended this mountain, the highest point (10,872 feet), about the valley. We are now getting ready to start back, and hope to get away before noon. I expect to be on Mt. Dana in a few days, then to Mt. Lyell, then by Cathedral Peak and Little Yosemite to Peregoy's, and Clark's.

"Clark and Moore's, Monday, September 4.

"On Monday, the 28th, we moved camp to the foot of Mt. Lyell. After dinner, I decided to begin the ascent on that day, so as to be on the snow in the morning before it should be softened by the sun. So, I took my blankets and some provisions, and set out at four, leaving Duncan in charge of the horses and camp. I walked up till it was nearly dark, when I found a comfortable place to sleep in a corner made by two smooth low precipices of rock at right angles with each other. I found some dry wood not far off, where some stunted pines grew in crevices of the rock, made some tea in a tin cup, and enjoyed the strange and savage scene around me. Immense precipices, great masses of snow, from which rose the black peaks of the summit, the roar of water descending by many channels and cascades over and among the rocks, and occasionally the rattling down of loosened stones, and the novelty of my situation, alone in that wild place, made a scene which impressed

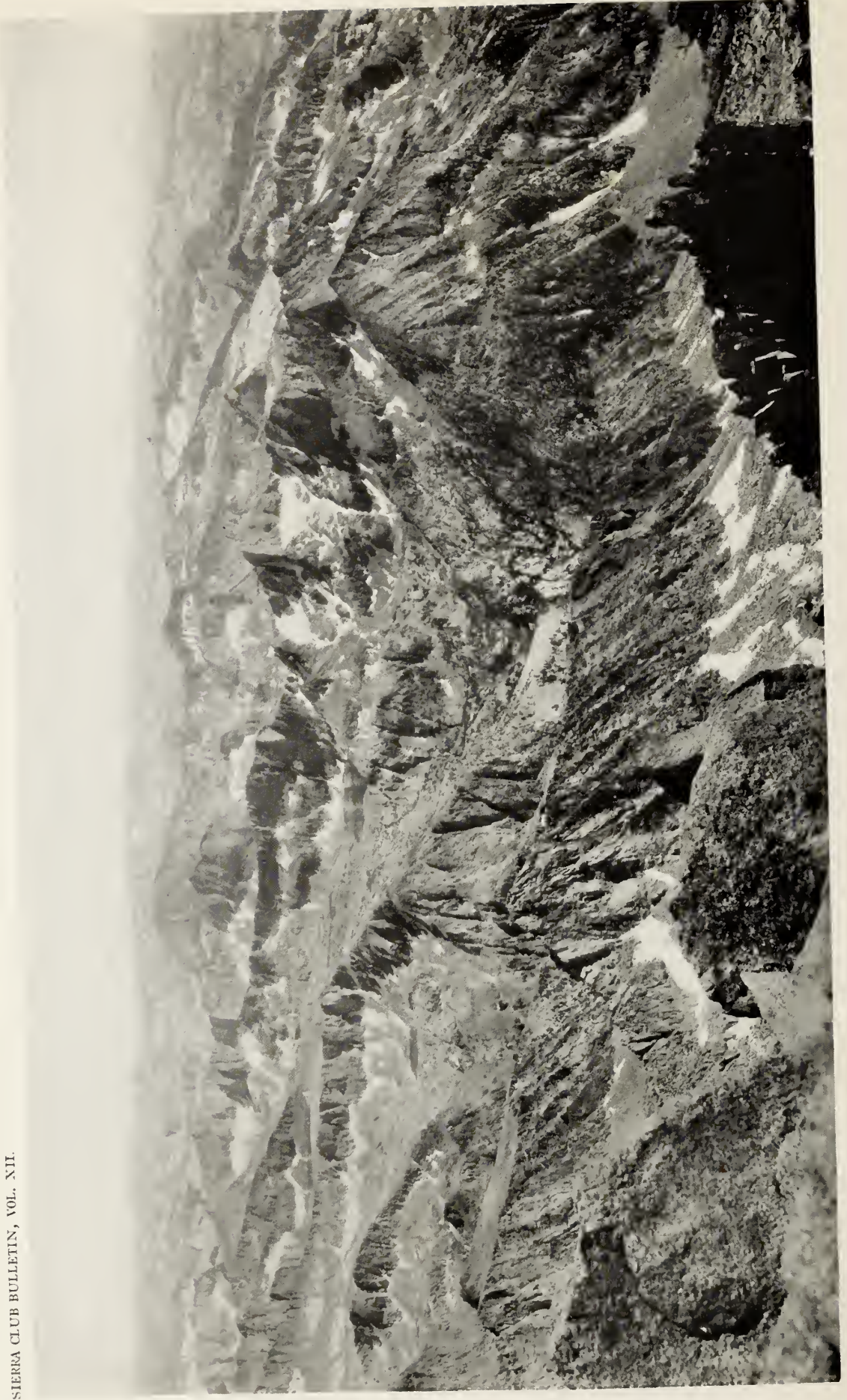




MOUNT SILL (14,100 FEET)

Photograph by Fred Herz





LOOKING SOUTH FROM SUMMIT OF NORTH PALISADE (14,254 FEET)  
Photograph by E. L. Macaulay



itself on my mind. Soon the moon, nearly full, rose over a great line of precipices half a mile across a gorge up which I had come, and gave new attractions to the view.

"I was up early the next morning, toasted some bacon, boiled my tea, and was off at six. I climbed the mountain, and reached the top of the highest pinnacle ('inaccessible,' according to the State Geological Survey), before eight. I came down the mountain, and reached camp before one, pretty tired."

So far as I can ascertain, this is the first ascent of Mount Lyell (13,090 feet). Search of John Muir's note-books and published writings indicates that Muir did not climb Mount Lyell before October, 1871, although the references to dates are so vague that this is only a conjecture.

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#### FIRST ASCENT OF MOUNT DAVIS—1891

Brigadier-General Milton F. Davis, of Cornwall-on-Hudson, New York, has kindly furnished a memorandum of his ascent of the peak (12,308 feet) bearing his name, standing midway between Mount Lyell and the Mount Ritter group. In 1891, Davis was a second lieutenant of I troop, 4th U. S. Cavalry, under command of Captain A. E. Wood, the first acting-superintendent of the recently established Yosemite National Park. The park boundaries as then constituted included Mount Davis as well as Mount Ritter and the Minaret region. General Davis writes:

"This was a tough trip; I left my detachment at Agnew's quartz mine and accompanied by Dr. Beers, a Methodist minister from Anamosa, Iowa, who was visiting my captain for the summer, and with two days' 'grub,' three aneroids, thermometers, etc., made the ascent and back to my camp in two days. Of all my surveying, mapping, and mountain-climbing of those days, the ascent of Davis was much the hardest. The Mount Ritter group of peaks is a terribly rough and impenetrable region.

"Even yet, it seems that I can remember every five minutes of that bitter night which Beers and I spent at the last big old dead tamarack tree that had dared to grow in that part of the world. We kept a good fire going all night and nearly perished even at that. We wore only light wool clothing to facilitate climbing and carried no blanket. My notes record 12 degrees above at 2 A.M. Beers gave out and did not cross the last gorge and make the last 2000 feet."

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#### FIRST ASCENT OF MOUNT LE CONTE—1925

Norman Clyde climbed Mount Le Conte (13,960 feet) in June, 1925, and again on August 27, 1925. He found no cairn or other indication of prior ascent on the summit. So far as can be ascertained, there is no record of any other complete ascent. In 1895, A. W. de la Cour Carroll and Stafford W. Austin climbed to within about 150 feet of the summit, but went no farther. (S.C.B., 1896, 1:8, pp. 325-326.) Clyde has furnished the following notes for the benefit of future climbers:

"Followed ridge running southeastward from peak 13,870; followed horizontal ridge running around southwestern shoulder of mountain;

encountered twenty-foot drop with insecure (for descent) holds; re-traced shelf for about a hundred yards; dropped down to and came up chimney, passing below twenty-foot drop, and proceeded to summit. On return, followed same route, except that I climbed the twenty-foot drop. The only difficulties could easily be overcome by two men with a rope."

On his first ascent Clyde encountered a snow-storm accompanied by a good deal of static electricity on the summit. He was unable to obtain any view. For this reason he repeated his climb later in the summer, by the same route, and was rewarded by a very fine view.

#### MOUNT MUIR

Norman Clyde reports Mount Muir (14,025 feet) an easy climb from the Mount Whitney Trail. He made the ascent in June, 1925, and found a cairn on the summit, but no names. There appears to be no definite knowledge as to the first ascent.

#### MOUNT DARWIN

Although the main crest of Mount Darwin (13,841 feet) has now been visited by a considerable number of people, only a very few have climbed to the detached pinnacle at the southeast which forms the actual summit. Dr. E. C. Andrews, of New South Wales, was undoubtedly the first to reach this highest point. (S.C.B., 1924, XII:1, pp. 88-90.) Norman Clyde reports that he climbed this rock on August 13, 1925, and found the register, with a note that it had been removed to that point on August 8, 1925, by O. Bartholomew and C. P. Steen. The route is described by Clyde as follows:

"Up the broad *talus* to left of ridge that extends toward upper portion of Evolution Lake; ascending, cross to next chimney at left; follow this to second chute opening to right; follow this chute, crossing a short knife-edge, to shoulder of main mountain; proceed southeast; drop down about forty feet to point north of ragged bit of rock that forms highest point; ascend eastern face of this rock, along crack, to summit. The last part of the climb is similar to that of Cathedral Peak."

#### MOUNT MALLORY AND MOUNT IRVINE

Two peaks near Mount Whitney, unnamed on the U. S. Geological Survey map, were climbed by Norman Clyde in June, 1925. No records were found on the summits, and in each case Clyde's ascent appears to be the first. He has expressed a desire to name these two peaks Mount Mallory and Mount Irvine, in honor of the two British climbers who lost their lives on Mount Everest in 1924.

Mount Mallory (13,870 feet) is on the main crest of the Sierra, northwest of Mount Le Conte.

Mount Irvine (13,790 feet) is east of Whitney Pass, and stands apart from the main crest.

#### OTHER ASCENTS BY NORMAN CLYDE—1925

Norman Clyde spent the entire summer in climbing from Mount Langley on the south to Mount Humphreys on the north. In addition to the ascents already noted, several unusual ones deserve mention:

Lone Pine Peak (12,951); East Vidette (12,742); North Guard (13,304),



some doubt as to highest point; Mount Ericsson (13,625); Mount Geneva (13,037), no previous record; Peak on Kings-Kern Divide (13,316), for which the name Mount Jordan has been proposed, no previous record; Peak on Great Western Divide (13,021), no previous record; South Guard (12,964); Emerald Peak (12,517), (accompanied by Julie Mortimer and Eleanor Bartlett), no previous record; Mount Haeckel (13,422); Peak (13,252) on main crest north of Mount Darwin, cairn; Peak (13,202) east of Mount Lamarck, cairn; Agassiz Needle (13,882), easily ascended, good view; Mount Winchell (13,749); Peak (12,545) above Dusy Lakes, cairn; Giraud Peak (12,539), no previous record, magnificent panorama.

Clyde concludes his memoranda: "I sometimes think that I climbed enough peaks this summer to render me a candidate for a padded cell,—at least some people look at the matter in that way. However, I got a lot of enjoyment from this rather strenuous form of diversion."

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#### MOUNT WILLIAMSON FROM THE NORTH

Mount Williamson (14,384), second highest peak in California and sixth in the United States, once considered a formidable climb, has now been ascended by several routes. An ascent made from the north by Homer D. Erwin last summer (1925) was probably the first from that direction. The climb was made from camp at timber-line in the cañon of Williamson Creek, up the long steep slope to the ridge running northeast from the summit, passing over the point given as 14,211 feet altitude; thence to the summit.

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#### MIDDLE PALISADE

The Middle Palisade (14,049) was ascended by two parties in 1925. The route followed in each case was approximately that of the first ascent described in *SIERRA CLUB BULLETIN*, 1922, XI:3, pp. 264-270. The record on the summit now stands as follows: August 26, 1921, Francis P. Farquhar, Ansel F. Hall, (first ascent); August 11, 1922, Norman Clyde, Clifton Hildebrand; August 12, 1922, Bob Fitzsimmons; July 13, 1925, Homer D. Erwin, Stanley B. Erwin; July 29, 1925, Robert M. Price, Walter L. Huber, Walter B. Marble.

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#### TOUR OF THE SIX HIGHEST PEAKS IN THE UNITED STATES

Captain John Henry Cuntz, American Alpine Club, who was a member of the Mount McKinley exploration of 1910, made during the summer of 1925 what is probably a unique tour, climbing the first six peaks in altitude in the United States: Mount Whitney, California, (14,501); Mount Elbert, Colorado, (14,420); Mount Rainier, Washington, (14,408); Mount Massive, Colorado, (14,404); Mount Harvard, Colorado, (14,399); and Mount Williamson, California, (14,384).

## NOTES FROM OTHER CLUBS



### SAVE-THE-REDWOODS LEAGUE

A great redwood forest reservation of national significance, comprising at least 12,000 acres and involving several million dollars, is planned in the Dyerville-Bull Creek region, Humboldt County, California, according to recent announcement by the Council of the Save-the-Redwoods League. This area, located about 245 miles north of San Francisco, represents perhaps the finest extant example of primeval redwood forest. It is located near the junction of the South Fork and the main Eel River, a point where the Redwood Highway meets the line of the Northwestern Pacific Railroad. It forms a logical continuation of the present Humboldt State Redwood Park south of Dyerville.

More than three-quarters of a million dollars are now available to the league toward the realization of this project. Plans for raising the balance necessary are now being formulated. A committee, headed by Colonel Henry S. Graves, of Yale University, has been appointed to negotiate with the owners of the timberland involved, and when a valuation is established a finance committee, of which Mr. J. D. Grant, of San Francisco, is chairman, will have in hand the matter of completing the financing of the project.

The league has also announced approval of a park project comprising one thousand acres, at the junction of Mill Creek and Smith River, Del Norte County, California. The Supervisors of Del Norte County have already made appropriation toward the establishment of the proposed park. The Mill Creek Flat, a part of this area, is scarcely second in point of beauty and importance to the flat at the mouth of Bull Creek. The proposed Del Norte Park is located on a new section of the Redwood Highway between Crescent City, California, and Grants Pass, Oregon.

The league during 1925 joined with other organizations in the state, in formulating and urging the passage of two bills before the Legislature creating a central State Park Commission and providing for a state-wide park survey. These bills were passed with scarcely a dissenting vote. They were vetoed by the Governor. The campaign for these measures served to bring out the need for a coherent and comprehensive state-park policy in California, and it is expected that before the year 1926 has passed the groups interested in this vital subject will formulate a plan for a state-wide survey that will be the basis for an ultimate system of state parks.

Among other noteworthy events in the history of the league during the past year have been further contributions by Mr. George Frederick Schwarz, of New York, a member of the Sierra Club, who was responsible for the creation of the Henry S. Graves Redwood Grove, ten miles south of Crescent City; the continuation of the scientific research on the subject of reforestation, under Major David T. Mason, Dr. W. A. Cannon, and Dr. D. T. MacDougal; a study of the recreational and landscape possibilities in the present state red-





CRESCENT MEADOW  
Giant Forest, Sequoia National Park  
Showing a remarkable number of perfectly crowned Sequoias  
Photograph by Bayard H. Jones





THE FLOWER GARDEN OF SIMPSON MEADOW

Middle Fork of Kings River

Photograph by Dr. C. O. Schneider



wood parks by Mr. Emerson Knight, landscape architect of San Francisco; the completion of a fund of \$40,000 by the California State Federation of Women's Clubs, which will be used to establish a redwood grove; and the establishment by the Native Sons of the Golden West of a redwood park near Woodside, San Mateo County, California.

The league now has a membership of over five thousand. In the past five years it has been instrumental in preserving close to three thousand acres of the finest of the redwoods, extending for almost fourteen miles along the redwood highway, and valued at close to a million dollars. The primary objective of the league in 1926 is the establishment of the great redwood area in the Dyerville-Bull Creek region.

NEWTON B. DRURY

#### THE MAZAMAS

One of the most notable accomplishments of the Mazamas during the past year has been the setting of lines of stakes across Eliot Glacier on the northeast face of Mount Hood, to record the surface movement of that ice-field. On July 12th a party of eleven Mazamas carried stakes and boring instruments to this glacier and set the stakes in lines across it at a high altitude. Other lines were located on the lower portion where the movement was slower. A topographic map was made of the terminus. Base points were marked and proper surveying data taken, so that the advance or recession of the terminus may be noted from year to year. Several visits were made to the glacier after the setting of the stakes and their lateral movements recorded. A detailed report of the Research Committee will be printed in this year's annual publication. It is hoped that the interest of other mountaineering clubs on the Pacific Coast will be aroused by this work, and that the net results will be of value scientifically.

The new lodge on the Mount Hood Highway at the foot of the Paradise Park Trail has been widely used. New ski-runs, to be used in the winter sports, have been cleared near the lodge.

Steps have been taken to erect another lodge near the head of the Paradise Park Trail, at timber-line. This will supply a much needed shelter for skiing and snow-shoeing parties in winter and for climbers at other times of the year. It is hoped that this structure will be completed next summer.

The yearly Fourth of July climb of Mount Hood was made by about sixty members and others who desired to qualify for membership in the club. Another party of fifty-four Mazamas made an ascent of the north side of Mount St. Helens, which also was a great success.

The annual outing was held at Mount Jefferson during the first two weeks of August. About a hundred members participated. The route taken was a new one for the Mazamas. The new skyline road constructed by the Forest Service, which was formerly an indistinct trail, is completed within about seven miles of Mount Jefferson, where the first week was spent. The second camp was made in Hunt's Cove on the south slope of the mountain. One of the scheduled feats to be accomplished on this outing was the climbing of the north side of the mountain. There are but two recorded climbs of this side, the latest having been made in 1906. The leader selected five other members to

make the attempt. The route is most difficult, on account of the badly eroded condition of the summit ridges. The attempt was successful. The entire party arrived on the highest pinnacle about three o'clock in the afternoon. The leader in scouting out a shorter route to camp attempted to descend the almost perpendicular east face. He was overtaken by falling rock which necessitated a quick descent to the glacier. He jumped to the steep ice-slope of Whitewater Glacier, where he lost his footing and was hurtled down the glacier several hundred feet. His subsequent rescue was one of the most heroic in the history of the club.

#### THE MOUNTAINEERS

The Mountaineers have had an active and successful year. There were no particularly sensational developments, but general progress has been satisfactory, and the outing activities increased considerably both in number and attendance. This was especially true with the smaller parties, of which a greater number made expeditions into more different sections of the Pacific Northwest than in any previous season. This is looked upon as a wholesome and encouraging condition, indicating effectiveness of the club's efforts to teach more people to love the mountains. Different groups of Mountaineers this year went into almost every region of major importance in the state.

The summer outing was in a part of the Cascades quite new to the club and most interesting. At no time was the party more than seventy-five miles from Seattle, yet the ruggedness and beauty of the section was unusually impressive. One first ascent was made and several other climbs of note. The final peak conquered was Mount Stuart, said by C. E. Rusk in his book *Western Mountaineers* to be the largest single mass of granite in the United States.

Continued and vigilant attention was given to Mount Rainier National Park development matters, in respect to roads, trails, and public accommodations; also in the idea that the national parks are, in effect, national outdoor museums. As museums they should be preserved and retained in as near the natural state as is consistent with reasonable facilities for accessibility.

#### THE COLORADO MOUNTAIN CLUB

R. L. DYER

The Colorado Mountain Club was founded to unite the enthusiasms of lovers of outdoors. In practice that has developed into work along lines of conservation and nature-study, and in pleasures along lines of outings, lectures, magazine publication, and clubroom maintenance. The outings include annually two considerable camps, local walks, short ski trips, and a field day. The lectures come about once a month, are open to the public (and very well attended), are illustrated by slides, and are on a wide range of outdoor subjects. This year they have included not only mountaineering and exploration, but astronomy and nature poetry. A new thing has been the broadcasting of programs over the radio.

Our summer outing of 1925 was held for two weeks in the Sangre de Cristo Mountains. The winter outing was, as usual, in Rocky Mountain National Park.

In our clubrooms we have a pleasant place for committee meetings, casual



chats with friends, arguments with the secretary, or the reading of books. We have a library of three hundred volumes and several magazines, including exchanges with other mountaineering clubs. Our own publication is the monthly *Trail and Timberline*.

LUCRETIA VAILE

#### TAMALPAIS CONSERVATION CLUB

Fire prevention on Mount Tamalpais is one of the most important parts of the work of the Tamalpais Conservation Club. Proof of our success in this work is in the fact that though we have been organized twelve years no fire caused by carelessness has been traced to any of our members; and as we have over 1200 members this is a record of which we are justly proud.

To train the hiker to be careful with fire, the club has built stone fireplaces at convenient camps on the mountain. To impress the hiker, signs are placed at these fireplaces, with rules governing the use of fire. To educate the hiker to the value of co-operation, propaganda is carried on in our club paper relative to fire prevention.

Each year our members are asked to help clear trails—this is not only for their own benefit, but allows the quick movement of men and equipment in fighting fire. As an added prevention, fifteen of our most active members are appointed deputy sheriffs of Marin County, with power to arrest anyone who violates the rules of the fire district. They are distributed through the different clubs, and each Sunday sees several doing patrol duty as they swing along on their hikes. The club also keeps a man on the mountain all year at an expense of \$1200 yearly, whose duty it is to patrol the trails and camps and co-operate with the fire wardens stationed on the mountain. M. F. O'BRIEN

#### THE APPALACHIAN MOUNTAIN CLUB

The Appalachian Mountain Club has had a busy year. In addition to Saturday walks and week-end and holiday trips, the Excursion Committee has run numerous excursions of a week or more. About four hundred enjoyed the winter trips to the White Mountains. In September a large party spent a week in the Laurentians. A few climbers went to the Alps for the summer, climbing Mont Blanc, the Matterhorn, the Jungfrau, and many lesser peaks. Three permanent camps—two in New Hampshire and one in Maine—were not lacking in popularity. The August camp (an annual wilderness camp, that shifts its location each year) made it possible for about seventy to climb Mount Katahdin. The huts in the White Mountains—with the help of one enlargement—successfully met the demands of club members and the tramping public. A camera club has been organized. The third annual photographic exhibition (for amateurs) is scheduled for December. Volume XVI, No. 2, of *Appalachia* appeared in June. A special number will appear in 1926, commemorating the fiftieth anniversary of the club, which will also be celebrated by a special meeting and dinner February 6, 1926. WILLIAM P. DICKEY

#### THE CALIFORNIA ALPINE CLUB

Club Purpose: "To make excursions into the trailed and untrailed portions of California for the purpose of bringing the people of the cities out into the open, and into a full enjoyment of the natural wonders of the state; to aid in

every way possible the preservation of the woods, streams, game, and natural features of the country."

The California Alpine Club was organized in 1914, and since that time its growth has been steady. It now boasts of a membership of 330, most of whom are active. Local walks are scheduled for every Sunday in the year, and in the past these have been covered by schedules issued semi-annually. Commencing with 1926, the local walks schedules will be issued three times a year.

In 1919, the first annual outing of the California Alpine Club took the party into the Kern River region of the Sierra Nevada, with Mount Whitney as its objective. Every year since then, a two-week annual outing has been made into different parts of the Sierra. The seventh annual (or 1925) outing, took the party into the splendid territory drained by the Roaring River, a tributary to the South Fork of Kings River. The 1926 outing will be made into the Kings River Cañon.

One of the largest undertakings of the club in recent years was the acquisition in 1924 of Alpine Lodge, which is located on Throckmorton Ridge of Mount Tamalpais, overlooking Muir Woods National Monument.

Many social events, such as dances, parties, and other forms of entertainment, are arranged for during the year. The most important of these is the Annual New Year's Jinks, and the Mid-Summer Reunion, held sometime during the month of June. *The Club Pace*, issued monthly, is the publication of the California Alpine Club. An office is maintained at 535 Pacific Building, San Francisco, and is open evenings from 7 to 9 o'clock.

J. A. PISSOTT, Chairman Publication Committee.

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#### SAN FRANCISCO BAY CHAPTER NOTES

Now that the San Francisco Bay Chapter of the Sierra Club has outgrown its swaddling-clothes, and has developed into a husky youngster nearly three years old, it is possible to take stock of past achievement and future hopes and arrive at an approximately correct conclusion as to whether the organization has justified itself as a useful organism in the Sierra Club body politic. The idea uppermost in the minds of the organizers was that merely local matters could be better and more expeditiously handled by a local organization; and now that the thing has been tried out, we think that this view has been proved to be correct.

The local walks schedules, the management of the local walks, and the various social activities of the club have been very successfully conducted under the new arrangement. While these activities do not directly contribute to the main aims of the club, they do interest and bring in a large number of new members; and one cannot be a member of the club for long without absorbing an interest in the more important aspects of conservation, so that indirectly they do foster our greater purpose.

The chapter has also been able to arrange for a number of suitable lectures, which have been well attended and have served to disseminate knowledge of



the natural wonders we are seeking to preserve. In line with this work, we are planning to acquire a set of fine slides, covering our beloved Sierra as completely as possible, to be used whenever chance offers for educating the public to the tremendous worth and beauty of our high mountain regions.

Just now we are trying to awaken a more general spirit of co-operation between our members and the Tamalpais Conservation Club; especially by becoming members of that organization. When we consider how much use and enjoyment we derive from the mountain, we should do this as a matter of duty, if from no other reason.

Now that we have our organization functioning smoothly, we have a number of plans which we hope may materialize; but they are yet too indefinite to be spoken of as certain, or even possible; but with the passing of time we hope that some of them at least may be brought to realization. A new organization must necessarily take some time to find itself; but we feel that our chapter has now done so, and that the future will more and more demonstrate its usefulness and value as a part of the larger club, working in its own humbler sphere to build up the greater organization, and adding to its strength and usefulness. If it can do this its existence is justified and its worth proven as an integral part of the Sierra Club.

E. C. PARKS, Chairman

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## SOUTHERN CALIFORNIA CHAPTER NOTES

### MOUNT SAN JACINTO AGAIN

The beautiful wild summit region of Mount San Jacinto is still unprotected; deer are fewer each year. Two vigorous efforts to save it have been made through the Federal Government, but they failed because the consolidation of all the land under government ownership was required.

Last winter a campaign was carried on to have the State Legislature declare this area of 10 by 4 miles to be a game refuge, thus protecting deer and other game, and saving this lovely bit of lofty and rugged woodland country unchanged. It is only a small wilderness, but it is the last, and considered by some the most beautiful, in southern California. The vote in the Senate for this measure was unanimous, and the Assembly gave it a splendid support. In June our committee was notified that Governor Richardson had signed the bill, a glad ending for all our anxious efforts. This information came from the office of the Governor and was sent to us in two different ways, either of which would seem final. Yet, about four months later, in October, we certainly got a body blow when we discovered that the bill had never been signed. It had been killed by a pocket veto.

This is by no means a lost cause. Plans are already being laid to go at it again, probably through the state a year from now. AURELIA S. HARWOOD

### WILDERNESS AREAS AND CAMP-SITES

Considerable interest has been aroused in what might be termed "wilderness areas"—that is, areas in which roads, cabin-sites, and resorts will be excluded;

"trail parks" they have also been called. The magazine *American Forests and Forest Life* for October, 1925, has an article by Aldo Leopold entitled "The Last Stand of the Wilderness." This article is a strong plea for the setting aside of such areas. A splendid start in this direction has been made in southern California, according to recent correspondence between the United States Forest Service and President Huber, copies of which are appended to these notes.

A committee, consisting of Dr. Herbert S. Adair and Ernest Dawson, both of Los Angeles, was appointed by the Executive Committee to look into the matter, and possibly make recommendations. ERNEST DAWSON

*Letter from L. A. Barrett, Assistant District Forester, U. S. Forest Service, to Walter L. Huber, President of the Sierra Club, October 29, 1925*

In further reference to your letter of October 15th and District Forester Redington's reply of October 17th:

Since the recent changes in forest boundaries of the Angeles, Cleveland, Santa Barbara, and San Bernardino national forests were made, most of the high country of southern California is now within the Angeles and San Bernardino national forests.

The San Bernardino Mountains, San Jacinto Peak, and part of the Old Baldy region are within the San Bernardino Forest; while the region to the north and west of Old Baldy is within the Angeles Forest.

As a result of a survey of the San Bernardino Forest, a comprehensive recreation plan of that forest has been prepared. This plan provides for the retention in a virgin state of all the main ranges of the San Bernardino Mountains above the 7500-foot contour; no special use permits to be issued therein and no road construction allowed there on forest land.

While such action has not been taken in the case of the country around San Jacinto Peak and Old Baldy, I am personally in favor of keeping them in their present state, and am asking the Forest Supervisors to carefully consider this matter in preparing recreation plans of those regions. Since there is considerable alienated land on the San Bernardino Mountains and San Jacinto Peak, it may not be possible for the Forest Service to handle these regions exactly as we would, providing all the land was in public ownership, but every effort will be made to prevent exploitation of this high country.

Since the Sierra Club is entirely familiar with all the southern California forests, we shall be glad to consider any suggestions the club may wish to make along this line.

*Letter from President Huber, of the Sierra Club, to Dr. Herbert S. Adair, of the Southern California Chapter, October 30, 1925*

I am enclosing a letter which I received today from Assistant District Forester L. A. Barrett confirming the statement in my letter of August 17th to Miss Harwood to the effect that the Forest Service has made a ruling against the leasing of summer-home sites or the building of roads in the area of the San Bernardino Mountains above the 7500-foot contour. Since the reorganization



of the southern California forests, the Angeles Forest, which I believe is under Mr. Cecil's management, does not include the mountain area back of San Bernardino, which is under the direction of Supervisor Boulden, who is stationed at San Bernardino.

You will note from Assistant District Forester Barrett's letter that similar action is contemplated for the area around San Jacinto Peak and Old Baldy, and that the Forest Supervisors have been asked to consider the subject in connection with these areas. In the same letter Mr. Barrett asks for suggestions from the Sierra Club. While I have made some trips to these regions and have a general familiarity with them, I do not know them as you and other members of our southern chapter do, and I would therefore greatly appreciate any suggestions from you along these lines, in order that I may take them up with Mr. Barrett personally.

*Letter from Charles J. Fox, of the Southern California Chapter, to President Huber, of the Sierra Club, November 5, 1925*

At the monthly meeting of the Executive Committee of the Southern California Chapter of the Sierra Club, November 2d, your letters to Dr. Adair and the letter of L. A. Barrett, Assistant District Forester, dated October 29th, were read. The Southern California Chapter is gratified at the plan for a recreational area in the San Bernardino Mountains, and we thank you particularly for your interest and assistance in accomplishing this. We appreciate the stand taken by the Forest Service, and particularly the invitation to the Sierra Club to make further suggestions. The following resolutions were adopted unanimously by the Executive Committee:

*First:* That we endorse the idea of the Recreational Area in the San Bernardino Mountains as outlined in Mr. Barrett's letter to Mr. Huber of October 29, 1925.

*Second:* That we approve the plan to exclude roads and cabin-sites above the 7500-foot level in this area.

*Third:* That we recommend that the greatest care be exercised in granting cabin-sites on forest land everywhere, and the effort be made to develop public camp-sites both along the roads and trails.

We feel that one of the greatest needs at the present time is for public camp-sites both along auto roads and trails. Last September we had a club trip to San Gorgonio Peak. Our plans called for camping where the auto road crosses the South Fork of the Santa Ana River. The leader made application for a permit for the club to camp there, but was told that all available space was taken by cabins, and it was necessary to change plans and camp at Barton's Flats which made the walk to the peak several miles longer.

Where the road crosses the South Fork is a natural camp-site, with fine water, big pines, and plenty of flat space for parking, cooking, sleeping, etc. *But* it is literally honeycombed with cabins, so that it is no longer possible for the public to camp, certainly not for a sizable party.

Many private cabins are used but a few times a year, yet the transient camper must keep off even though the cabin is located on the most desirable spot in the vicinity. While the Sierra Club is not prepared to oppose all cabin-

sites, we do earnestly recommend that the largest possible number of campsites be reserved for the public, especially in areas opened up by the extension of roads and trails.

A committee of Dr. Herbert S. Adair and Ernest Dawson was appointed to keep in touch with the situation, and we hope to make further recommendations at a later date.

*Letter from Paul G. Redington, District Forester, U. S. Forest Service, to President Huber, of the Sierra Club, November 23, 1925*

Your letter of November 20th, enclosing copy of Mr. Fox's letter of November 5th, is received, and I am very glad to have the views of your organization in this matter.

When Supervisor Boulden and I prepared the recreation plan for the San Bernardino Forest last summer, we took particular pains to select and reserve over fifty of the most desirable camping-places on this forest, all of which will be improved as rapidly as funds are available. On the Santa Ana River watershed alone eleven such sites were selected, and all of them are well located and will develop into very fine camping-places.

While a site was selected near the South Fork junction with the main river, it will be necessary to go below the cabin-sites for a camp, as the necessity for a camp here was unfortunately not taken into consideration when the cabin-sites were rented some ten years ago.

However, we have another fine site at Big Meadows which will provide for future needs.

It is our policy to provide first of all for public camps, and in the future recreational development of this and any of the other California national forests we shall endeavor to provide amply for the camping public before renting land for cabin-sites.

Since I am certain that Forest Supervisor Boulden will be interested in your position relative to the use of the San Bernardino Mountains, I am sending him copies of your letters and feel sure that he will be glad to have in the future the views of your organization on matters affecting the San Bernardino National Forest.





MARION LAKE AND MRS. LE CONTE'S MEMORIAL



IN MEMORY OF HELEN MARION LE CONTE (1865-1924)





ARROW PEAK (12,927 FEET) FROM THE UPPER SOUTH FORK OF KINGS RIVER

At crossing of Cartridge Pass Trail

Photograph by Ansel E. Adams



## FORESTRY NOTES

BY WALTER L. HUBER



The following statement from the Department of Conservation of the California Development Association, with the editorial comment of the *San Francisco Chronicle*, sums up in a most appropriate manner the progress in fire control in the national forests in California:

This year has marked a great awakening for people of California. Never before has there been shown such an intense interest in forest protection. Never in the history of the state has there been evidenced such perfect team-work in handling what might have been a serious situation as has been shown this year. The United States Forest Service through careful study has greatly improved its methods of fire control, and this year can be justly proud of the fact that sixty per cent of the eighteen hundred fires were put out by Forest Rangers before they had covered an area of one quarter of an acre. Each of these fires might have covered many thousands of acres had not prompt action been taken. The California Development Association is doing everything within its power to encourage the people of this state to give to the United States Forest Service and the State Board of Forestry their hearty co-operation in fire prevention. As is shown by the record, great progress along these lines has been made. Only one-third as many forest fires were started this year by the hand of man as were started last year.

From the *San Francisco Chronicle*, October 31, 1925:

### A PAT ON THE BACK IS BETTER THAN A LILY IN THE HAND

"A great portion of the credit for this remarkable record in forest-fire suppression should be given to our district forester, Paul G. Redington, who has been untiring in his efforts."—*California Development Association*.

A pat on the shoulder of a living man who is doing good work is more satisfying and sensible than a bunch of lilies on his coffin after his ears may no longer be able to hear or his heart to respond to honest commendation, and it's fine to see the C. D. A. doing just this to Paul.

He puts out two fires where one was put out before, and saves ten trees where one was saved before, and does it with a third of the noise and none of the bragging, and that's a record that well deserves a pat on the back and a series of hearty banzais from the C. D. A. and the rest of us.

### FIRE CO-OPERATION—THE CLARKE-McNARY ACT

The Clarke-McNary Act, passed by the 68th Congress, marks an important turning-point in forestry in the United States. This act provides for the protection of forest land, the reforestation of denuded areas, and for the extension of national forests in order to promote the continuous production of timber on lands chiefly suitable for that purpose, under the direction of the Secretary of Agriculture, in co-operation with officials of the various states and other agencies. The act consists of nine specific sections, and will become operative as Federal funds become available.

Under sections 1 and 2 of the act it is incumbent upon the Forest Service to develop, in co-operation with local agencies, systems of fire protection adapted to the conditions in each of the principal forest regions of the United States, and to recommend such systems, with suitable enabling legislation, to the respective states. In setting up this policy of Federal co-operation it is designed that ultimately the Government will contribute one-fourth of the total expenditures necessary for adequate forest fire protection in all regions, and the ultimate Federal allotment is estimated at \$2,500,000 a year. Under these two sections of the act the Forest Service is now co-operating with twenty-nine states, and is contributing \$635,000 per annum in carrying out these provisions.

Devising tax laws designed to encourage the conservation and growing of timber is provided for under section 3. With the appointment of the noted economist, Dr. Fairchild, of Yale University, this work has been initiated. Without proper tax laws for growing timber crops, private effort in forestry is economically unattractive.

Under section 4 a new phase of Federal co-operation with the individual states is established in the encouragement of tree-planting and the establishment and maintenance of state forest nurseries. In 1925, \$50,000 was contributed to twenty-five co-operating states, and a maximum of \$100,000 annually is possible under this section.

Under section 5, in co-operation with individual states and the Extension Service of the Department of Agriculture, farm forestry is encouraged. In 1925, \$50,000 was appropriated, but this figure will ultimately reach \$100,000 a year.

The other sections provide for the further extension of national forests either through setting aside lands now in Federal ownership or through acquisition of private lands necessary to safeguard watersheds and navigable streams, or to produce timber-producing areas. Ample opportunity for extending educational effort on the entire forestry problem of the nation is afforded by the liberal provision of the act.

Last year California's share of the Clarke-McNary Federal allotment was \$29,770 for fire protection and \$600 for its state nursery.



## BOOK REVIEWS



JEPSON'S Botanists throughout the world, and particularly in the United  
MANUAL OF States and California, will hail with delight this complete and  
CALIFORNIA trustworthy book on taxonomic botany. For nearly half a cen-  
PLANTS\* tury botanists have had to content themselves with the two  
cumbersome volumes of the Geologic Survey by Brewer, Wat-  
son, and Gray for a consideration of the flora of California as a whole. These  
volumes were at all times scarce, and accessible to few, and therefore non-  
existent in so far as the teacher, student, or nature-lover was concerned.

Now, with Dr. Jepson's manual in his knapsack, one may hie himself  
"whither he wildest," to the mountain-top, ocean-shore, valley, or desert with  
the assurance that the fern, tree, shrub, or flower which for any reason what-  
ever becomes an object of interest will be ably described. Unlike many of the  
popular floras, the illustrations have been carefully selected and mean some-  
thing, as the morphology of the flower, the most important feature of the plant,  
is accurately delineated.

Most manuals are compilations, but this one is an origination and could  
be written only by one familiar with the nooks and crannies of the state.

The style of the book is all that could be desired, the families, genera, and  
species being in bold black type and discernible at a glance. The accentuations  
of the Latin names by such an authority as Dr. C. B. Bradley will settle many  
arguments now prevalent in the field as to correct pronunciation.

The first nineteen pages, in small print, and therefore very "meaty," give  
the author's views on the geographic distribution of the seed-plants of Cali-  
fornia, and include the life-zones, geologic history, endemic and alien popula-  
tions, the concept of genera and species, and climatic, edaphic, and parallel  
variations.

In all, 4019 species are keyed out and described (not merely listed) with  
their general distribution throughout the state.

Acknowledgment to the few specialists who have made contributions ap-  
pears in the text, many of whom are past or present students of the author.

It would be superfluous to enumerate the many previous excellent publica-  
tions of Dr. Jepson, who is well known for scholarly work in the botanical field.

In a work covering so large an area students of the flora of California may  
find that a few species are accidentally overlooked or not yet described, but  
this feature must add to rather than detract from the value of the book, as  
the student will be instilled with a new zeal and inspiration surpassing that  
which comes from traversing the known field.

Specialists will no doubt find an "i" undotted here and there, but this too

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\* *A Manual of the Flowering Plants of California*. By WILLIS LINN JEPSON. 1237 pages.  
1023 original drawings. Associated Students' Store, University of California, Berkeley,  
California. 1925. Price, \$7.50.

will only spur them on to the completion of the "perfect flora," which has ever been in the mind of the author of this manual.

P. B. KENNEDY, Professor of Agronomy, University of California

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A NEW            Amateur bird students have waited long for a useful handbook  
FIELD-BOOK    on California birds. The one widely used emphasizes so largely  
OF BIRDS\*      the bird in the hand, and so often pictures a dead specimen,  
                 that all interested have wished for something built on a different  
                 plan. A book with some of these desirable features has just been issued  
                 by Luther E. Wyman, ornithologist of the Los Angeles Museum, and Elizabeth  
                 F. Burnell, assistant supervisor of nature-study in the Los Angeles city  
                 schools and member of the Sierra Club.

The authors set as their aim a bird guide in concise and convenient form which will enable students to identify in the field the birds of the southwestern United States, or, in other words, the birds of southern California and Arizona. A colored plate of the Arizona hooded oriole by Allen Brooks forms the frontispiece. In the preface attention is called to the interesting avifauna of the Southwest and the numerous life-zones represented. The Colorado and Mohave deserts are becoming important recreation-grounds, and this book should be welcomed by those who feel the perennial charm of the desert. As distinctive birds of the area treated, the following are mentioned: white-throated swift, Clark nutcracker, cañon wren, valley quail, water-ouzel, western mocking-bird, wren-tit, bush-tit, and blue-fronted jay.

An introductory chapter is devoted to life-zones, this being accompanied by colored distribution maps of North America, of California and Arizona, and of a cross-section of Mount San Jacinto. In the introduction, attention is called to the way in which the book is to be used, a glossary of terms used in describing a bird and abbreviations used in the text. The book has an ingenious make-up. On the left-hand facing page is given the common and scientific name, color description, and field-marks, while across on the right-hand facing page is a pen-and-ink drawing of the bird in life, a map showing the distribution of the bird and a written statement as to when and where the bird is to be found. The pen-and-ink drawings are well done, and in most instances give a very fair idea of the silhouette and markings of the various species. Under each description of a family is given a very short treatment of the main field-marks and food habits.

In so small a book some things have necessarily been left out which would have added much to the completeness of the volume. For instance, little information relative to nests or nesting habits is given, and call-notes and songs are mentioned only in connection with a few species. Even the song of the water-ouzel goes unmentioned. Nearly always writers of such a volume quickly discover their inability to express in words useful mannerisms helpful in field identification, and this is a problem that has been only partly met in

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\* *Field-Book of Birds of the Southwestern United States.* By LUTHER E. WYMAN and ELIZABETH F. BURNELL. Houghton Mifflin Company, Boston. 1925. 308 pages. Four color plates, and many illustrations. Price: leather, \$5.00; cloth, \$3.50.



this book. As is so often the case in bird books, greater care could have been taken in putting the same kind of information in exactly the same place in each write-up. A description of the mud nests of the cliff-swallow is given in the main write-up, whereas the descriptions of the nests of the tree-swallow and violet-green swallow are given in the paragraph relative to distribution. When one turns to the keys at the back of the book, he searches in vain for a key to the sea-birds or to the wrens. The field keys to species treat only of the main large families of birds. Supposedly, the book itself is sufficiently key-like to aid in finding other birds than those used in the keys. The book ends with a list of birds treated, arranged according to the American Ornithologists Union's check-list of North American birds, with A.O.U. numbers, length in inches, and status as regards where found.

Though of local interest and lacking in some details, unquestionably this is the most handy, useful volume yet published for the beginning student of California birds. Its clever drawings and distribution maps will give it lasting usefulness. A copy in the hands of a Sierra Club hiker in the Sierra Madre will assure identification of birds seen. We await as fine a volume for the use of students in northern California.

H. C. BRYANT

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RIDER'S            Of guide-books it might seem that California already has a  
CALIFORNIA       plenty. Chambers of commerce, realty boards, transportation  
GUIDE\*            companies, and agencies of one kind or another have flooded  
                      the country with propagandic literature emphasizing the charms  
of this or that favored section of the state. In this rush of selling California to  
the world the poor bewildered traveler who finds his way beset with pitfalls  
may tuck Rider's little volume into his valise with the confidence that interested  
advertising and super-superlative "boosting" find no place inside its covers.  
What could give one more evidence of disinterestedness than that the writer  
already has in preparation a similar guide-book to Florida!

*Rider's California* is a good guide; authoritatively and amply constructed on the Baedeker plan, with encyclopedic information concisely and reasonably accurately presented. In scope it is broad and thorough, without undue emphasis on any section or locality, and by no means restricted to the usual routes of travel and the larger centers of population.

A comprehensive introduction summarizes the features, history, bibliography, and life and customs of the people. Anecdotal historical paragraphs are scattered generously through the rest of the text, and many new and interesting things may be learned by even the old-time resident concerning his own most familiar stamping-grounds. Here one may appreciate the industry and scholarship of Frederic Taber Cooper, the compiler, whose three years of field-work are evident in the fresh originality of the material he has selected.

It is noteworthy that the outlying and mountain regions have been treated with due appreciation. There are descriptions of Mount Shasta, Lassen Peak,

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\* *Rider's California: A Guide-book for Travelers*. Compiled under the general editorship of FREMONT RIDER by FREDERIC TABER COOPER, A.M., Ph.D. New York: Macmillan Company. 1925. With 28 maps and plans. 12mo. Price, \$5.00.

the Klamath River country, Tahoe, the Yosemite, the Mother Lode district, and the new John Muir Trail through the High Sierra from Yosemite Valley to the cañon of the Kern. Acknowledgments to the Forest Service, and to the Sierra Club, disclose the source of much of this information. Brief quotations from writings of John Muir, Clarence King, J. D. Whitney, and many others are included. There are no illustrations, but their place is more than filled by the fine maps covering localities most generally frequented by tourists.

The comprehensiveness of the work and the mass of information presented make inevitable the frequency of minor errors, which will undoubtedly be corrected in future editions. One of the most curious mistakes is the statement that Owens Lake was named for "Prof. Richard Owen." How old Dick Owens, the hardy companion of Kit Carson, would have handled the writer for that designation!

Is it not enough praise to be able to say that *Rider's Guide* will be just as useful and welcome to stay-at-home Californians as to travelers and newcomers?

CHARLES L. CAMP

**PICTURESQUE AMERICA\*** The flood of illustrated literature on American scenery has in recent years poured forth as steadily as some of the waterfalls pictured in illustrated folders; indeed, even more steadily than some temperamental cascades dependent on seasonal rains and snows. Yet here is one more book that the prospective tourist, the collector of outdoor books, and even the average reader, can scarcely afford to neglect. It is a book, also, which has, as the editor hopes in his foreword, "educational and inspirational value for the American boy and girl." An individual or a family planning next summer's vacation may here obtain a bird's-eye view of what America has to offer, from Canada to the Caribbean.

The editor has attempted to give in picture and in story an account of the outstanding scenery of America—what the national-park people call the "major scenic attractions." In a way, it is a symposium of scenery, considered both esthetically and practically; for the lesser scenic attractions when offering opportunities for outdoor life are not neglected. It may be said that the editor has succeeded in his attempt; yet the general impression gained from this book is that it might well be expanded in its next edition to become an encyclopedia of American scenery, an illustrated Baedeker or Murray of national parks, forests, and playgrounds.

There is a foreword by Stephen T. Mather, who is by way of being our leading authority on scenery—either scenery as provided by the Great Architect or scenery embellished by such necessary (in places) additions as hotels and public auto-camps. Chief Forester Greeley contributes an enlightening article on recreation in the national forests. The table of contents is well arranged, and is both novel and useful in its method of districting the attractions in the Pacific Northwest, the eastern states, and so forth.

The illustrations are always good, often extremely well chosen. Appropri-

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\* *Picturesque America: Its Parks and Playgrounds*. Edited by JOHN FRANCIS KANE. Resorts and Playgrounds of America. New York. 1925. Price, \$15.00.



ately enough, a colored picture of Bryce Cañon, the most unusual as it is the most colorful spectacle in America, is the frontispiece.

If some of the descriptive matter violates literary canons on economy in the use of adjectives, and if such textual errors as a thousand feet in the height of Mount Whitney or assigning the Kings River Cañon to the "Yosemite district" tempt a Californian to violent criticism, these minor lapses must not be emphasized to detract from a valuable addition to America's literature of the out-of-doors.

JOHN R. WHITE

BEAUTIFUL CANADA\* Vernon Quinn has chosen Canada, rightly termed "Beautiful," as the subject of his latest book. It is a volume of special interest to nature-lovers and surely no one could be unresponsive to the beauty and charm pictured in its pages. The immensity of the territory to be covered made its description, after any fashion, a lengthy task. Mr. Quinn elected to take this great country province by province and faithfully record the beauties and peculiarities of each. This method necessitated a certain amount of repetition. Descriptions of somewhat similar features follow each other chapter by chapter. Only one with the golden touch to make his word-pictures live could give to each successive page a separate interest.

*Beautiful Canada* has a certain historical value, and the extracts from the diaries of the old explorers form enjoyable interludes. The medieval wording of these adventurers of the past is very quaint and whimsical. The author has not failed to give full space to Canada's historic localities. The sites of the old fur-trading posts, rich in Indian, French, and English tradition, form no small portion of the claim of each province to interest, and their history is deftly suggested in swift touches. Woven in with these are many anecdotes and odd sketches of character.

A wealth of Indian legends is interspersed throughout the book. Snatches of delightful and mystic lore about the tender-hearted moon mother and cannibalistic fish monster, the raven and his ever-present grandmother, and dozens of others. Many of these were gleaned directly from the Canadian tribes by the author.

Toward the end of the volume will be found a chapter on scenic roads and one on Canada's national parks, but the text attempts only a short and simple suggestion of the beauties of each and is content with locating them and giving the main points of interest. The real descriptions have gone before, and perhaps these charming word-pictures are the most valuable part of the book. The author must have a deep-rooted love for the wilds. He certainly has a clear understanding of the meaning of beauty. His accounts of the Canadian forests, with their mountains, lakes, and riverways, are lovely pieces of descriptive writing steeped in iridescent, exquisite colors. He has a feeling for the shades and meanings of words that lends a fresh charm to each page, and gives the reader of each glowing description almost the thrill of actually seeing what the author saw. His use of Indian place-names has a charm of its own.

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\* *Beautiful Canada*. By VERNON QUINN. Frederick A. Stokes Company, New York. Price, \$4.00.

The illustrations, from photographs, are beautiful and typical. They were evidently selected with great care. Had they been better reproduced they might even have claimed the attention away from Mr. Quinn's pen-pictures. The whole book leaves a feeling of beauty and peace, and to lovers of the outdoors it has more than the interest of a novel.

IRENE D. PADEN

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ON THE ROOF OF THE ROCKIES\* Far up among the glistening snowy peaks of the Canadian Rockies, at an altitude between eight and nine thousand feet, lies the great Columbia Ice-field, 150 square miles in extent. The ice-field is like an undulating plain up there among peaks some of which are more than twelve thousand feet in height. Wonderful to look upon, even more striking is the fact that the meltage flows west, north, and southeast, finding its way to the three great oceans—by the Columbia to the Pacific, by the Athabasca to the Arctic, and by the Saskatchewan to the Atlantic in Hudson Bay.

The early traders and trappers, and the railroads themselves, have passed around this region on the north and the south. Mountain-climbers have been there only occasionally. The Inter-Provincial Survey gave a definite report of this hitherto almost unknown region. But it is the nature-photographer who must present its beauties to the world. And in the splendid book just published, *On the Roof of the Rockies*, by Lewis R. Freeman, we have the story of how Byron Harmon has done this by his successful expedition in the summer and fall of 1924 to photograph the Columbia Ice-field—the crowning achievement of twenty years spent picturing the Canadian Rockies. Freeman accompanied him and helped make the moving-picture film, and his book tells of their traveling, with guides and pack-trains, five hundred miles along the Continental Divide, some of the way with bad trails, most of the way with none. They were prepared for hardship and danger, and plenty of both were found as they fought their way through fallen timber, struggled in countless muskegs of almost bottomless glacial silt, forded rivers where often the horses had to swim, and even got their animals across glaciers, among crevasses, and on the return journey floundered through endless hours in the deep snows of the high passes—with a temperature much below zero. The perilous adventures of the expedition were many in spite of their remarkable equipment and the fine quality of both guides and horses. The humor of the men often turned a dark moment into a sunny one. For the work, they had the moving-picture camera, four still cameras, and an enormous quantity of photographic supplies. They had carrier pigeons, which several times took messages out for them, and a portable Radiola, which more than once gave the replies to these messages. This radio outfit must have had nine lives, for many times it seemed to be hopelessly injured in its pack-train travels; but it would be cleaned of mud and water, put together again, and give wonderful service. In cold and storm near the end of the trip—"there in our wretched

\* *On the Roof of the Rockies*. By LEWIS R. FREEMAN. Dodd, Mead & Company, New York. 1925. 270 pages, illustrated. Price, \$5.00. (Limited edition of 150 copies, \$10.00.)





FALLS OF EVOLUTION CREEK  
Photograph by Lee L. Stopple



FALLS BETWEEN EVOLUTION LAKE AND COLBY MEADOW  
Photograph by Dr. C. O. Schneider





SUMMIT OF MIDDLE PALISADE (14,049 FEET)  
Photograph by Walter L. Huber



NEAR THE SUMMIT OF THE HERMIT  
Photograph by Walter L. Huber



little camp on the Arctic side of the divide, that blessed little black box reached up and teased things out of the ether in a way we had never had them before, even at Athabasca Glacier.”

AURELIA S. HARWOOD

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THE CANADIAN ALPINE JOURNAL     *The Canadian Alpine Journal* for 1924 contains two very interesting and beautifully illustrated accounts of the Columbia Ice-field, 150 square miles in area, the largest in the Canadian Rockies, lying along the border between Alberta and British Columbia. The climbs of Mount Clemenceau, fourth highest peak in the Canadian Rockies, and Mount Geikie, in the Robson region, illustrate the careful preparation necessary—in fact, the climbers conduct a regular siege in their conquest of the summit, contending with stormy weather, a factor Sierra climbers do not often face. The ascent of the west face of Sir Donald reads like a description of a Swiss climb. Mount Robson, the prize peak of the Alpine Club, took several years' onslaughts to subdue, and a lady writer describes her recent successful attempt, showing that she can write with as much vigor as she climbs. The article on the scientific method to exterminate the mosquito will interest all who have encountered this pest and pleasure-wrecker.

RODNEY L. GLISAN

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THE MOUNTAINEER     *The Mountaineer* for 1924 is dedicated to the members of the third Mount Everest expedition, and the first article is a fascinating description of the Himalayas as a climbing field, the writer referring to the awe and reverence the primitive people have for the highest peaks on earth. The director of our National Park Service has an interesting article on America's national parks, complimenting the efficiency of the Canadian National Park Service in its improved methods of fighting fires. The Mountaineers made the circuit of Rainier last year, and this wonderful trip is well described by the president of the Mazamas, who was a member of the outing. The flowers of Rainier have no equal, and the New Year's outing of the club to Paradise Inn is also unequaled for winter sports—both subjects well covered. Interesting information is furnished by the park superintendent on tourist travel. The various attempts to climb St. Elias, Alaska's 18,000-foot snow-peak, and a pleasure trip to Alaska are well described. The president of the Mountaineers describes the Association of Spring Builders, started from the efforts of a young lady in beautifying one of Wyoming's springs for benefit of all who pass by.

RODNEY L. GLISAN

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MAZAMA     *The Mazama Annual* for 1924 specializes on Mount Adams, the club having made the circuit of the mountain that year. This mountain is one of the guardian peaks of the Columbia River and ranks second among the isolated volcanoes of the Cascades. The first article describes the circuit through mountain parks across nine large glaciers and the climbs to the summit. The first ascent up the difficult west side of Adams is covered in another article. Fifty week-end trips of the club are cleverly written up, also

the ascent of Fujiyama, by a lady Mazama, giving valuable information about the climb. In "Mountain Climbing as a Popular Sport," the writer emphasizes the fact that it is one of the safest and most beneficial forms of activities, and can be enjoyed long after the sports of college days are discarded. "Above Six Thousand Feet" is the title of another article, urging more attention to collection of data regarding snowfall and glacial movements. "A Glossary of Mountaineering and Glacial Terms" is a valuable contribution. "A New Glacier on Hood" is described, and the Mazama Lodge and winter sports are featured.

RODNEY L. GLISAN

APPALACHIA In the abundance of interesting material the latest issues of *Appalachia*, (volume xvi, numbers 1 and 2) a selection for comment becomes difficult. A memorial to George Leigh Mallory heads the December number, which contains likewise a record of the third Everest expedition. Deserving special mention also is Robert Sterling Yard's comprehensive article on "Our National Monuments." The leading article in the June issue is a reprint of a paper on Mount Katahdin, written by Thomas Wentworth Higginson in 1855. Edward W. Harnden's "Call of Colorado" makes the lure of the Rockies almost irresistible. The illustrations maintain their customary high standard, and E. G. Chamberlain's "panoramas" are interesting and valuable contributions, suggesting similar treatment of western mountain views at the hands of devotees of the Sierra and the Rockies.

MARION RANDALL PARSONS

THE WHITE MOUNTAINS OF NEW HAMPSHIRE\* It is about time that some of our Sierra Club members returned the many pleasant calls that we have had from our friends of the Appalachian Mountain Club. If anyone assumes that the eastern mountains are unworthy, he has much to learn. So, on the next trip East, any time between June and October, or even in midwinter, plan for at least a few days in the White Mountains. And that you may know what to do, and that you may not become lost, take with you the two pocket guides that have been published during the past year.

Mr. O'Kane's book might be called an introduction to the White Mountains. It gives a good conception of what is most worth while, presenting a choice selection of trails and summits with many alluring hints of their charm. You will want to take it to the mountain-tops, for it describes the scenes along the way and the views from the summits.

When the Appalachian Mountain Club published its first guide to White Mountain paths, in 1907, the little book was gratefully received and promptly went into the hip-pocket of the tramper, whence it emerged at every crossing of the trails for earnest consultation. Since that time the book has expanded enormously in contents, but happily not in bulk. The old blue prints have

\* *Trails and Summits of the White Mountains*. By WALTER COLLINS O'KANE. Houghton Mifflin Company, Boston and New York. 1925. 308 pages. Price, \$2.50.

\* *Guide to Paths in the White Mountains and Adjacent Regions*. (Sixth Edition.) Published by the Appalachian Mountain Club, Boston. 1925. 529 pages. Price, \$3.00.



given way to an abundance of neat little map squares with contour lines, and an admirable folding map of the whole Mount Washington region is found in the back. The directions are clear and concise and are the fruit of many years of careful testing and revision. This guide-book, throughout its editions, has been the work of a committee of the club, and is clearly the result of much thoughtful care and devoted labor.

A thought that at once comes to a Sierra Club member upon looking over the Appalachian Mountain Club's achievement is that we should have just such a guide-book for the High Sierra. It is perhaps high time that we appointed a committee to undertake this work, for the need already exists and will be more apparent long before it can be filled. FRANCIS P. FARQUHAR

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THE NEW YORK WALK BOOK\* A Sunday walk of a New York outing club never passes without at some point in the trip a member's pulling from his pocket a copy of *The New York Walk Book*, and poring over it to identify the points named in a sketch, to retail some bit of history connected with the place, or to ask the leader which of the two possible routes he intends to take.

The little thin gray volume is a new departure. It is essentially a handbook; a detailed guide to greater New York and the country within a radius of from fifty to a hundred miles of the city suitable for walks of one or two days; giving traveling time by train and on foot, railway fares, routes, trails, landmarks, topography, geology, and historical backgrounds. A handbook is not usually fascinating, but the charming pen-sketches that fill this book make it extremely so. It has, as well, numerous maps compiled from topographic sheets of the U. S. Geological Survey, an index, and a bibliography. Appendices contain material on equipment, conduct, and fire laws, and on plant life and geology of the region. The "writer-walkers" are thoroughly familiar with every foot of this varied and delightful region, and have mapped out routes and pointed out trails so plainly that even the most confirmed pavement treader, if armed with this book, a compass, and a little outdoor sense, "could not err therein."

ETHELINDA JAMES

FOURTEEN THOUSAND FEET† The Colorado Mountain Club has published a pamphlet giving the history of the naming and early ascents of the high Colorado peaks. Mr. Hart has evidently expended a prodigious amount of effort in looking up original sources of information and in checking conflicting data. It is interesting reading for any outsider, and particularly valuable for mountain enthusiasts in Colorado.

The lists of mountain peaks in North America exceeding 14,000 feet in altitude will be found most illuminating to those who have heretofore had only vague ideas on the subject. There are fifty-eight such peaks listed for the

\* *The New York Walk Book*. By RAYMOND H. TORREY, FRANK PLACE, JR., and ROBERT L. DICKENSON. American Geographical Society, New York. 1923. 217 pages; maps, and 80 pen-sketches.

† *Fourteen Thousand Feet*. By JOHN LATHROP JEROME HART. Published by the Colorado Mountain Club, Denver. 1925. 53 pages.

United States, of which forty-seven are in Colorado, thirteen are in California, and one in Washington. California has the highest, Mount Whitney (14,501); Colorado follows with Mount Elbert (14,420); and then comes Mount Rainier (14,408) in Washington. Outside of the United States, Alaska takes pre-eminence with Mount McKinley (20,300); Canada has Mount Logan (19,850); and Mexico reaches great heights in Orizaba (18,564) and Popocatepetl (17,540).

The thoroughness of the Colorado mountain data leads one to hope that other western states that have not compiled such information about their own peaks can find someone to follow Hart's example. RODNEY L. GLISAN

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OUR GREATEST MOUNTAIN\* This is a work of rare excellence. As a handbook, it is concise, instructive, and an interesting storehouse of information. The scientific data are presented in the briefest manner possible, and the illustrations are fitting and well placed and at once stimulate interest and understanding.

The work is divided into four books, each complete in itself. The first book, of three chapters, presents "The Story of the Mountain," "The Glaciers of Mount Rainier," and "Human History." The second book, of two chapters, deals with "Description and Administration" and "Scenic Features, Roads and Trails." The third book, of seven chapters, tells of the flora and fauna to be found in Rainier National Park. The chapter headings are: "Life Zones on Mount Rainier," "Flowers of the National Park," "Ferns of Mount Rainier National Park," "The Forests of Mount Rainier National Park," "Animals of the Park," "Birds of the Park Region," and "Fishes of the Park." The fourth book, of one chapter, describes the park in winter and pictures most alluringly the winter sports to be enjoyed.

The introduction, written by Stephen T. Mather, Director, National Park Service, is also an excellent criticism. Of the author and his book he says: "Mr. Schmoe, who is the Park Naturalist at Mount Rainier, has spent much time and effort in studying the hoary old mountain and its surroundings, including the wild life of the region, both plant and animal. He is therefore well qualified to interpret the region and its natural phenomena to park visitors. I believe that the knowledge to be derived from a study of his book will add much to the enjoyment of a visit to Mount Rainier National Park."

Mr. Schmoe offers his book to stimulate interest in the natural beauty of a gigantic outdoor museum, and to provide for the visitor a guide-book to the roads, trails, scientific features, and natural history of the region. To say that the author has accomplished his object is a dull commentary, but a simple and direct one. His book is excellent reading, and is one of the few that one cares to treasure in the storehouse of his memory. I highly recommend it to all that are attracted by the beauty and appeal of the great out-of-doors.

BEULAH R. RICHTER

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\* *Our Greatest Mountain*: A Handbook for Mount Rainier National Park. By F. W. Schmoe, B.S.F., Park Naturalist, National Park Service. G. P. Putnam's Sons, New York and London. 1925. 353 pages. Price, \$3.50.



EXPLORATION  
OF THE  
SIERRA NEVADA\*

Since its reorganization in 1922, the California Historical Society has published a quarterly of great interest and merit. In its numbers are found articles dealing with the exploration of the West, and California in particular, with accounts of pioneer days and pioneer leaders, and many rare manuscripts have been reprinted and edited in its pages. An article which appeared in the March (1925) number is of prime interest to lovers of the Sierra. There Francis P. Farquhar, in *Exploration of the Sierra Nevada*, presents a survey of the work of the mountain explorers from the days of the Spaniards, who first looked upon their snowy crests, and the American trappers, the first white men to penetrate their fastnesses, down through the work of miners, sheepmen, Army officers, surveyors, and mountain-lovers, to the present time. The Sierra Club receives due credit for its services in filling in gaps in the earlier maps. The statements are carefully documented, enabling the reader to turn, if he pleases, to the primary narratives, and a list of the first recorded ascents of all mountains over 14,000 feet and many of the more important lesser ones is given. Mr. Farquhar's article has been reprinted in a limited edition and makes a welcome addition to the literature of mountaineering.

PAYSON J. TREAT

. . .

THE FIGHT  
FOR EVEREST†

The story of the Mount Everest Expedition of 1924 will stand forever as a tale of valor, a saga of our own times. The two men who lost their lives were of heroic mold, splendid physique, admirable in character, and, above all, indomitable in spirit. One can almost see through the mystery of their death and behold them rise, clasped by the friendly hands of Captain Scott of the Antarctic tragedy and Sir John Franklin of the frozen north.

This book should be read if only for the pleasure of knowing the men who live in its pages. The Englishmen command our admiration and respect for their physical prowess, their hardihood, their fiber, as well as for their geniality and sincerity. The native porters, Nepalese and Tibetans, are a delightfully human lot: picturesque, of marvelous endurance, a bit pungent if one gets too leeward of them, even in imagination. There is an impression of everyone being busy every moment, yet with a strong, intelligent purpose behind all the activity, and, above all, a firmness of character and greatness of spirit.

Until the first Mount Everest expedition, of 1921, no white man had set foot within many miles of this loftiest region of the Himalaya. Within these few years, however, the great peak has emerged from the mysterious obscurity of unknown Tibet into world-wide publicity. From the results of the expeditions of 1921 and 1922 we learned a great deal about the character of the mountain and its surroundings. Its contours were mapped, something of its geology and natural history became known, and its features became familiar

\* *The Quarterly of the California Historical Society*. Four volumes. San Francisco, 1922-1925.

† *The Fight for Everest: 1924*. By Lieutenant-Colonel E. F. NORTON, D.S.O., and other members of the expedition. With illustrations and map. Longmans, Green & Co., New York. Price, \$7.50.

through photographs. The route to the very summit was discovered and tested in 1922. And now we know something more: we know what deeds human beings are capable of at the world's greatest heights, and we know that, although baffled for the moment, nevertheless man can and surely will stand upon the supreme crest. For, as Sir Francis Younghusband says in the introduction to this latest report: man now knows the worst about Mount Everest; "and he knows that he himself has further resources within him which he can bring up against the mountain, and he is confident of victory."

Whether Mallory and Irvine actually reached the summit on that fatal day in June, 1924, we do not know and may never learn. They did not return, and with a storm impending, no one could follow them to the heights above. But though the summit may not have been attained, this at least was accomplished: four men, two unaided by oxygen tanks, two with such assistance, reached an altitude of over 28,000 feet, the highest elevation ever reached by mountain climbers. Mallory and Irvine, using oxygen, were last observed moving slowly upward from a point about 800 feet below the goal. Colonel Norton, without oxygen, reached 28,126 feet, over a thousand feet higher than the non-oxygen record of 1922.

Of almost equal importance with the mountaineering features of the expedition are its contributions to a knowledge of the Tibetan people and their country, adding substantially to the information obtained on the two preceding expeditions. The illustrations in the latest volume are especially fine. We now for the first time see something of the color of the Tibetan country through the excellent reproductions of Somervell's paintings. The new map of the Mount Everest region deserves the careful study of mountaineers and of map-makers. Its beautiful engraving is typical of the care and good taste with which the entire book has been prepared. FRANCIS P. FARQUHAR

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PIONEERING IN  
THE CANADIAN  
ROCKIES\*

There has been received too late for review in this number a handsomely illustrated book by a well-known alpinist; being a record of exploration and pioneer ascents in the Canadian Rockies, 1914 to 1924.

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\* *The Glittering Mountains of Canada*. By J. MONROE THORINGTON. John W. Lea, Publisher, Philadelphia. 1925. 107 illustrations, 7 panoramas, 6 maps. Price, \$4.50.



## MISCELLANEOUS NOTES



### STATEMENT OF CLAIR S. TAPPAAN, PROFESSOR OF LAW, UNIVERSITY OF SOUTHERN CALIFORNIA, LOS ANGELES

[A subcommittee of the Committee on Public Lands and Surveys, United States Senate, held public hearings throughout the western states during the summer of 1925, on matters relating to the national forests and the public domain. At a session of the committee held in Los Angeles on September 26, 1925, Mr. Clair S. Tappaan, professor of law at the University of Southern California, and a former president of the Sierra Club, voluntarily appeared and made a statement. The transcript of the entire series of hearings has been printed in fourteen parts by the United States Senate, pursuant to Senate Resolution 347, Sixty-ninth Congress, First Session. Mr. Tappaan's statement appears in Part 14, pages 3873-3883. Extracts from this statement are here reprinted.]

MR. TAPPAAN. Mr. Chairman, for the past 25 years I have been interested in the forests and mountains of California. I am a New Yorker by birth, and I think I was first attracted to California by the articles written by the late John Muir in *Century*. I came to California in 1900, and at that time there was practically no information as to the beauties of the mountains, with the exception of the writings of John Muir and the elder Le Conte. I spent my summers exclusively for many years in tramping over the mountains from the Mexican border to the Canadian border.

At the time I came to California practically the only region exploited was the Yosemite Valley, then held by the State of California. Some years later that was ceded to the United States Government. I early became identified with the only mountain club then functioning in California, the Sierra Club, which had been founded and sponsored by Muir, Le Conte, David Starr Jordan, and others of the same type. During these years I have come in contact with the people who are interested in the mountains, and perhaps I speak from a prejudiced standpoint, being a mountain-lover.

The thing that I want to emphasize first is this, that the mountains should be in the control of a strong central power. In the early days of the Yosemite the state made appropriations. Those appropriations were not ample, and I am sorry to say the appropriations went practically all for junkets for the committee. I had it impressed on me very much. I was in the Yosemite the last year it was under state control, and the year after that I was in the northern part of the state—that is, the first year the Government took it over—and when I went back two years after you would not know the park. So to my mind the parks should be in the hands of a strong central control.

I am greatly interested in the rendering symmetrical the so-called Sequoia National Park. I am familiar with practically the whole region. And to my

mind if that particular region can be enlarged along the lines that have been outlined, we are going to have there an oasis which for all time is going to be a great educational center for southern California.

Now, the park as extended will give a chance for all classes to secure an idea of what truly Sierran scenery is. It is a wonderful playground, a wonderful place for the tired humanity of our cities.

The outline of the parks includes a diversified line of scenery. You can get the giant trees; you can get the trout streams, the little meadows, the wonderful cliffs, and many pretty waterfalls.

It is undoubtedly a wonderful territory to feed sheep on, but there are lots of other territories that are just as good that do not have the natural wonders that can be used for that. The power is being developed elsewhere, so that question is not one of importance.

I feel a great deal of sympathy for the stockman and the sheepman who, when this was an infant state and not thickly populated could send his stock wherever he saw fit. Throughout the whole West we have had the same proposition, unpatented land, freedom to graze everywhere. But times have changed since then and they never have had a vested right.

If I were a stockman I would certainly try to hold on to the free grazing or the grazing which is practically free under the grazing permits that they have had. I certainly appreciate their position. But the point that appeals to me more than anything else is this: Why today is that of so much importance to them? It is because of the fact that the lands in the valleys have been withdrawn, used to other purposes. They fought hard to keep the homesteaders out. And the answer to that was the greater use for the greater number.

Unfortunately from their standpoint we have come to the same thing in reference to the mountains. It is the greater use for the greater number.

Now, as to the interference with the rights of hunting, etc. I spent the first 25 years of my life in the mountains carrying a gun around and I hunted all of this territory. The last few years though I have changed. I have had more real sport taking a camera and taking pictures of animals I used to kill.

The same answer I make to the statement that we are impinging on the rights which are not vested rights to hunt. I think that where one man shoots two deer in a season, if we can take the populace of the city up and let a thousand or maybe ten thousand see that same deer we are doing a good deal more for the country than we are if we let them be practically exterminated.

If, granting that in certain parts of the domain the higher utility is livestock, is it not better that we should know at this time where we are going to place the greater utility on livestock and where on the lives of men? And it seems to me that if we can set aside under ironclad restrictions certain park privileges for the people, we are going to go a long, long way; we are going to fix rights which at the present time are not in the most admirable condition. We are going to set aside so that the livestock man will know, "I can feed here under certain conditions," and the camper, the business man, "I can camp here under ideal conditions." And they both have interests, although to my mind the human is greater than that of the brute kind.



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